"EFFECTIVENESS OF THERAPEUTIC BACK MASSAGE AND MUSIC THERAPY ON QUALITY OF SLEEP AMONG HOSPITALIZED PATIENTS WITH INADEQUATE SLEEP AT POST OPERATIVE WARD GOVERNMENT RAJAJI HOSPITAL, MADURAI 20"

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CERTIFICATE

This is to certify that this dissertation titled, **"EFFECTIVENESS OF THERAPEUTIC BACK MASSAGE AND MUSIC THERAPY ON QUALITY OF SLEEP AMONG HOSPITALIZED PATIENTS WITH INADEQUATE SLEEP AT POST OPERATIVE WARD GOVERNMENT RAJAJI HOSPITAL,MADURAI 20"** is a bonafide work done by **Mrs. S.Muniammal** , College of Nursing, Madurai Medical College, Madurai -20 submitted to the Tamilnadu Dr.M.G.R. Medical University, Chennai in partial fulfillment of the university rules and regulations towards the award of the degree of Master of Science in Nursing, Branch I , Medical Surgical Nursing Under our guidance and supervision during the academic period from 2010-2012.

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ABSTRACT

The study conducted to evaluate the effectiveness of Therapeutic back massage and Music therapy on Quality of sleep among Hospitalized patients with inadequate sleep at Post Operative Ward Government Rajaji Hospital Madurai-20.

Objective: To assess the quality of sleep for post operative patients. Conceptual Frame work Conceptual Frame work adopted for this study was Imogine M Kings Goal attainment theory. **Research Approach:** The research approach used for this study is experimental approach. **Research Design:** The design of the study was quasi experimental pretest and post test design. A total number of 60 patients with inadequate sleep at post operative ward were selected for this study according to the inclusive criteria. **Sampling technique**: Purposive sample technique was adopted for this study. **Data Collection Procedure**: The final data collection was done from the post operative ward at Government Rajaji Hospital Madurai Formal written permission from the authorities the data collected for 4 weeks. The investigator selected patients with inadequate sleep at post operative ward on (3^{rd} post Operative day onwards). On the first day Pre- test was done and then back massage for Group 1, Music therapy for Group II Back Massage and music therapy for 10 minutes given for both groups respectively. Then post test evaluation was made. The data collected from study subjects were analyzed using descriptive Mean, Standard Deviation. Chi-square test, t-test, paired t-test and inferential statistical method. **Results:** The findings of the study revealed that the pretest and post test score in Group I and Group II is significant. **Conclusion:** The researcher found that Back Massage is effective in improving the quality of sleep among post operative patients than the music therapy.

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CHAPTER I

INTRODUCTION

Sleep is the golden chain that ties health and our bodies together

-Thomas Dekker

BACKGROUND OF THE STUDY:

Sleep is a basic human need. It is a universal biological process common to all people. Human spend about one-third of their lives asleep. Sleep is a vital for not only optimal psychological functioning but also physiological functioning as the rate of healing of damaged tissue is greatest during sleep Robinson (2005).

Sleep is a state of rest accompanied by altered consciousness and relative inactivity. Two systems in the brain stem, the reticular activating system (RAS) and the bulbar synchronizing region are believed to work together to control the cyclic nature of sleep. There are two major stages of sleep non-rapid eye movement (NREM) Rapid eye movement (REM).

NREM consists of 4 stages:

Stage I and II light sleep Stage III and IV is a deep sleep.

Proper rest and sleep are important to good health .So sleep deprivation is a problem due to hospitalization especially in the ICU. Sleep is important to health perhaps no more so than when people become sick . Indeed, it is likely that failure to sleep slows the recovery of patients hospitalized with acute illnesses. Sleep disturbance is a leading cause of hospital complications. Such as falls and delirium Poor sleep also has been linked to reduced immune function. All of these problems potentially impair the ability of patients to recover from acute illnesses that caused them to be hospitalized. Yet hospitals are notoriously difficult places for patients to sleep. Illness symptoms can interfere with sleep, as can noisy roommates. To make matters worse, hospital protocols often lead to further sleep disturbances, with hospital personnel waking patients in the middle of the night to check vital signs or draw blood. As a result, just when people need sleep the most, they often don't get it . Fortunately, there is a simple way to reduce sleep disturbances; a change in policy stating that patients are not to be disturbed in the middle of the night unless it is medically necessary.

In Postoperative Circumstances, General and Abdominal Surgery, there is a reduction in REM sleep in most hospitalized patients, but in surgical patients it is nearly completely obliterated during the immediate postoperative period. It is known that catecholamines and cortisol levels rise sharply abdominal, and thoracic surgery immediate postoperative in the early postoperative period and can inhibit REM sleep, but the most powerful suppressant is probably the effect of opioids. Oxygen desaturations occur frequently in the postoperative period and appear most pronounced on the second and third postoperative nights.

Sleep is essential to human life. Sleep patterns are significantly disrupted in patients who are hospitalized, particularly those in the intensive care unit. Sleep deprivation is pervasive in this patient population and impacts health and recovery from illness. Immune system dysfunction, impaired wound healing, and changes in behavior are all observed in patients who are sleep deprived. Various factors including anxiety, fear, and pain are responsible for the sleep deprivation. Noise, light exposure, and frequent awakenings from caregivers also add to these effects. Underlying medical illnesses and medications can also dramatically affect a patient's ability to sleep efficiently. Therapy with attempts to minimize sleep disruption should be integrated among all of the caregivers. Patel M, (2008).

Post-operative sleep disturbance, with suppression of rapid eye movement sleep and slow wave sleep followed by a subsequent rebound, seems to be related to the magnitude of trauma and thereby to the surgical stress response. Furthermore, the environment, pain and the administration of analgesics seem to be important factors in the precipitation of sleep abnormalities. Post-operative sleep disturbance may contribute to the development of episodic hypoxemia, haemodynamic instability and altered mental status, all of which have an influence on post-operative morbidity and mortality. Rosenberg. J (1995).

If the patient having sleep deprivation, complimentary therapies like back massage or back rub and music therapy are induced to promote sleep. Back Massage generally follows after patient’s bath. A backrub acts as a general body conditioner and can relieve muscle tension and promote relaxation.

Massage therapy the scientific manipulation of the soft tissues of the body, is a healing art, an act of physical caring, and a way of communicating without words. Massage communicates gentleness and connection, trust and receiving, and peace and alertness.

As an adjunct to medical treatment, massage may be helpful in relieving backaches, headaches, muscle spasm and pain, hypertension, swelling and pain from injuries or after surgery. Grand mal epileptic seizures, insomnia, anxiety and depression. It can be a palliative treatment for the comfort of those bedridden people. Even people in deep comas may show improved heart rates when their hands are held. Most newer comprehensive cancer treatment programs offer massage as a standard component of care. Massage can reduce agitation in people with Alzheimer's disease, and it has been used to relieve stress at disaster sites.

Back rub, lasting three to five minutes, offer physiological and mechanical benefits to clients in a variety of settings. A back rub is usually given after the bath. But you may also find that one given in the evening will help clients to relax fall asleep. Massage the back in a slow, rhythmical, and relaxed manner. Tightness through the shoulder and neck muscles from an uncomfortable resting position can be relieved with friction of Petrissage. Gently rubbing the skin over bony areas increases circulation and helps prevent skin breakdown.

Music is another modality has been viewed as therapeutic purpose. Music produces an altered state of consciousness through sound, silence, space, and time. It must be listened to for at least 15 minutes to be therapeutic. The use of earphones helps clients to concentrate on music. In an acute care setting, listening to music can be highly effective in reducing a client's postoperative pain.

Music therapy can reduce anxiety and pain, and promote relaxation among hospitalized patients as shown by decreased heart rate, respiratory rate, myocardial oxygen demand, and systolic blood pressure (Byers & Smyth, 1997).

The characteristics of music best suited for sleep and relaxation promotion are of approximately 60 beats per minute, composition of primarily low tones, and arrangement predominately by stringed instruments (white 1999). 10 minutes of music can be used as gentle wakeup in the morning after meals to settle digestion just before bedtime, to aid sleep, and during the recovery period from illness.

Physical effects are brain function physically changes in response to music. The rhythm can guide the body into breathing in slower, deeper patterns that have a calming effect. Heart rate and blood pressure are also responsive to the types of music that are listened to. Music can also relieve muscle tension and improve motor skills Levels of endorphins, natural pain relievers, are increased while listening to music, and levels of stress hormones are decreased. Mental effects are depending on the type and style of sound. Memory and learning can be enhanced, and this used with good results in children with learning disabilities. The term "Mozart effect" was coined after a study showed that college students performed better on math problems when listening to classical music. A variety of musical moods may be used to create feelings of calmness, tension, excitement, or romance. Lullabies have long been popular for soothing babies to sleep.

1.1 NEED FOR THE STUDY:

Major surgery is beset by complications such as pulmonary, cardiac, thromboembolic and cerebral dysfunction, which cannot be attributed solely to inadequate surgical and anesthetic techniques, but rather to increased organ demands caused by the endocrine metabolic response to surgical trauma.

Postoperative cerebral dysfunction comprises delirium, confusion and milder degrees of mental dysfunction and disturbances in the normal sleep pattern Changes in early postoperative sleep and sleep after non-surgical stress are characterized by a decrease in total sleep time, elimination of rapid eye movement (REM) sleep, a marked reduction in the amount of slow wave sleep (SWS) and increased amounts of non-REM (N-REM) sleep stage 2. Recent data have suggested that postoperative sleep disturbances may be involved in the development of altered mental function, postoperative episodic hypoxemia and haemodynamic instability.

REM sleep is the phase most closely associated with dreaming. It is more similar to full awareness than sleep, in the variability and rapidity of changes in physiological state. There are marked variations in arterial pressure and heart rate, rate and depth of breathing, and metabolic rate. It appears that we act out our dreams physiologically. Major differences from N-REM sleep are also evident in respiratory control during REM sleep. The motor neuronesare hyperpolarized during REM, with the exception of the facial muscle supply and that of the diaphragm.

The postoperative sleep pattern Only six studies have been performed with EEG recording of sleep in postoperative patients after non-cardiac surgery, including a total of 35 patients after major abdominal surgery, 18 patients after herniorrhaphy and 46 patients after minor undefined surgery After abdominal surgery all patients were sleep deprived, as shown by total sleep time, proportion of REM sleep and SWS on the first and second postoperative nights in the ICU and on the ward. Total sleep time was reduced by up to 80 % on at least 1 of the first postoperative nights, with considerable inter- individual variation. Throughout the operative night and the subsequent 1 or 2 nights, sleep was highly fragmented with numerous movement arousals and spontaneous awakenings with long wake periods, preventing the inherent rhythm city of sleep and the normal distribution of sleep stages. REM sleep is usually absent on the first and sometimes the second and third postoperative nights during the following 2–4 nights, when other sleep abnormalities recover, REM sleep reappears with increased density and duration (rebound) in most patients.

In patients undergoing cholecystectomy and gastroplasty, showed that increments in REM sleep during rebound were primarily a result of lengthening of individual REM sleep periods rather than to an increased number of periods. Thus, increased total REM sleep time, combined with increased REM density, results in a substantial rebound in total REM activity. The increase in REM activity is associated with frequent reports of distressing and vivid nightmares (knill and colleagues).

The increased postoperative sympathetic activity with increased catecholamines may contribute to post operative sleep disturbance as high levels of noradrenergic activity maintain wakefulness. Cortisol, another of the key mediators in the endocrine response to surgery, causes reduction in the REM sleep and increases in Non REM sleep when administered to health volunteers. Then Growth Hormone Releasing Hormone (GHRH) may have a sleep inducing effect and is probably increased during the post operative period.

Sleep disturbance is a common occurrence among hospitalized persons

Hospitalized elders are especially prone to experience disturbed sleep while in the hospital, and they appear to be more vulnerable to the deleterious effects of sleep deprivation than younger adults. Because it occurs at a time when sleep needs are

greatest, sleep disturbance is a significant source of stress for older adults experiencing acute illness, resulting in impaired protein synthesis and decreased cellular immunity (Krachman 1995).

A number of factors contribute to the development of sleep disturbance among hospitalized elders. A number of illnesses commonly seen among hospitalized elders, such as chronic obstructive pulmonary disease, congestive heart failure, and dementia are associated with sleep disruption, as are many medications frequently used by older adult patients lastly, the hospital environment has been widely observed to adversely affect the quality and quantity of patient's sleep. There are non-pharmacologic and pharmacologic interventions are there to promote sleep.

Non-pharmacologic approaches are generally preferable in treating sleep disturbance among older adults because sedative-hypnotic drugs are associated with an increased risk for falls, delirium, and functional decline in hospitalized elders.

Sleep deprivation and disruption can cause a myriad of physical and psychological changes, which can all have an impact on health care.

Massage is the word comes from the French massage "friction of kneading" is the manipulation of superficial and deeper layers of muscle and connective tissue to enhance function, aid in the healing process, and promote relaxation and well-being.

The use of massage and touch to relieve, relax, cure and improve performance has been utilized in various forms throughout the world and has been an integral component of healing and health care for centuries. Sleep is also disrupted by environmental factors, including noise and bright lights that disrupt the natural light dark rhythm. By controlling excessive noise and lighting, providing non pharmacologic approaches to alleviating anxiety, and promoting sleep, the nurse demonstrates care and compassion. Actions such as turning a piece of noisy equipment away from the patient's ear, lowering a light, massaging a back. Providing back massage and instituting quiet times; both of these actions increase sleep in ICU patients. The concept of using back massage to ease patients to sleep seems intuitive; however, it was not systematically studied until recently. In a 69 patients in an ICU, a

5 minute slow back massage promoted increased sleep by 1 hour, compared with a control group. If back massage was a hypnotic medication. It would be routinely ordered for ICU patients.

"If our hearts provide us with the pulse of life, then music connects us in a direct way with our own natural rhythmical instrument – the body."

-Mohmet Oz

Music lifts the human being above the humdrum tasks of daily life, soothing his mind, affording a medium to express his joy at being alive; it relaxes the nervous system and gets rid of the tensions. Music therapy is one example of a non pharmacological treatment for reducing the stress and anxiety of critically ill patients. Music therapy is defined as the use of music in a therapeutic manner to promote patient well being. Music therapy is not just turning on a patient's radio and leaving the room. It is though fully working with a patient, and suggesting to him or her that listening to music on headphones in a darkened room with no interruptions can facilitate the relaxation response.

Williamson JW (1992) assessed the effects of ocean sounds on sleep after coronary artery bypass graft surgery. He conducted a interventional study in a large public hospital with primary, secondary, and tertiary care facilities. Among a consecutive sample of 60 first-time CABG patients was systematically assigned to the experimental or the control group. For the experimental group, the sounds were played on the Marsona Sound Conditioner for three consecutive nights post transfer from the ICU. No control of environment, except for the elimination of white noise, was done for the control group was assessed by the Richards-Campbell Sleep Questionnaire, a visual analog scale, provided self-reported sleep scores on six variables.

The study reveals that there were significant differences in sleep depth, awakening, return to sleep, quality of sleep, and total sleep scores; the group receiving ocean sounds reported higher scores, indicating better sleep. There was no difference in the falling asleep scores. The use of ocean sounds is a viable intervention to foster optimal sleep patterns in postoperative CABG patients after transfer from the ICU.

Sleeplessness is a common condition today. Music therapy is a branch of Ayurveda Called Gandharva Veda, It creates a link between the macrocosm (the universe) or the surrounding environment and the individual mind and body which constitute the microcosm(a small place). Melodious sequences are used to achieve balance between the individual and the surrounding environment. Prevention or reduction of the post-operative sleep disturbance may be achieved by minimizing surgical trauma, changing the conventional nursing procedures, avoiding opioids and treating pain with non-opioid analgesics, Post-operative sleep disturbance represents an important research field, since it may have a significant adverse impact on post-operative outcome.

From the findings of literature the researcher realized the importance of promoting sleep by nursing interventions and other measures to prevent inadequate sleep. It was planned to give back massage for Group I subjects and music therapy for group II subjects and compare the effectiveness of both in promoting sleep.

1.2 STATEMENT OF THE PROBLEM

"A Comparative study to evaluate the effectiveness of Therapeutic back massage and Music therapy on Quality of sleep among Hospitalized patients with inadequate sleep at Post operative ward Government Rajaji Hospital Madurai -20 ".

1.3 OBJECTIVES OF THE STUDY:

1. To assess the sleep Quality among post operative patients.
2. To assess the effectiveness of Back massage on Quality of Sleep in Group I.
3. To assess the effectiveness of Music Therapy on Quality of Sleep in Group II.
4. To compare the quality of sleep between the patients in Group I and Group II after Back Massage and Music Therapy.
5. To associate the sleep quality with selected demographic variable.

1.4 HYPOTHESES

H1- There will be significant relationship between the Post test Quality of sleep of patients received back massage and Music therapy

H2- There will be significant difference between the post test Quality of sleep of patient received Back Massage and Music Therapy

H3- There will be significant difference between the Quality of sleep after back massage /music therapy and selected demographic variable

1.5 OPERATIONAL DEFINITION

Effectiveness

In this study effectiveness refers to the extent to which back massage and music therapy have achieved the desired effect of quality of sleep of patient.

Therapeutic Back Massage

It refers to the manipulation of muscles in the thoracolumbar region by means of stroking and circular kneading for 10 minutes from scapula to the spinous process.

Music Therapy

It refers to the administration of rhythmic and melodious tune recorded I pod for 10 minutes intended to induce sleep.

Quality of Sleep

It refers to the sleep pattern and to modify inadequate sleep. And subjective feeling of freshness in the morning as measured by Subjective Assessment of Quality of Sleep (SAQS).

Hospitalized Patients

It refers to those subjects having inadequate sleep even after 3rd post operative day.

Inadequate sleep

In this study, inadequate sleep is insufficient and irregular night time sleep less than 6 hours during night, with more than 3-4 awakening during sleep as measured by Subjective Assessment of Quality of Sleep Scale (SAQS).

Post operative Ward

It refers to ward in which the patients who undergone Appendectomy, Mastectomy, Herniorraphy, Cholecystectomy is being treated.

1.6 ASSUMPTION:

1. Good sleep is essential for good health and recovery from illness.
2. Non pharmacological interventions induce / promote sleep.
3. Inadequate sleep is common among post operative patients.

1.7 DELIMITATION:

The study is delimited to

1. Selected post operative ward.
2. Sample size was 60.
3. Data collection period is limited to 6 weeks.

Projected Outcome

Nursing intervention with clients with inadequate sleep can be promoted by giving non pharmacological intervention like back massage and music therapy.

CHAPTER II

REVIEW OF LITERATURE

The term review of literature refers to the activities involved in identifying and searching for information on a topic and developing an understanding of the state of knowledge of the topic.

This term is also used to designate a written summary of the state of the art on a research problem. The investigator carried out an extensive review of literature on the research topic in order to gain deeper insight into the problem as well as to collect maximum relevant information for building up the study. This was accomplished by using Medline, internet and surveyed the latest nursing journals and books.

In the present study the review of literature is organized and presented as follows:

1. Literature related to sleep experience of Hospitalized patients.
2. Literature related to back massage.
3. Literature related to music therapy

2.1 REVIEW OF RELATED STUDIES

2.1.1 LITERATURE RELATED TO SLEEP EXPERIENCE OF HOSPITALIZED PATIENTS

Cong,Xiaomei, MSN,RN (2011) USA conducted a co relational design study to examine sleep patterns and relationships in postoperative patients among 232 adults 19-75 years, at a tertiary hospital, The Richards –Campbell sleep Questionnaire was used to measure sleep factors during the night . Sleep was measured each morning for the previous night; night before surgery (BS) and postoperative nights 1, 2, and 3 (nights 1, 2, 3). The total sleep score for before surgery and night 1, 2, and 3 were 51+ 28, 51+26, 57+25 and 62+24. This study reveals that abdominal surgical patients sleep disturbances were worst in the night before surgery and only improved a little by night 3.

Piayngman-uhlin (2011) conducted a descriptive comparative study at university hospital Sweden to describe the sleep-wake cycle, sleep quality, fatigue and Health Related Quality of Life (HRQoL) measured with questionnaires, actigraphy and a sleep diary during a one-week period in patients undergoing peritoneal dialysis (PD) treatment at home, and compared with the patients with coronary artery disease (CAD), and individuals from the general population. This study reveals that PD patients' (N=28) had more fragmented sleep ($p<0.001$) and worse sleep efficiency (SE%) ($P<0.0001$) than the CAD (n-22) and the population (n=18) groups. Further it revels PD patients exhibit worse sleep quality than CAD patients and individuals in the population Evaluation of sleep in clinical practice is highly recommended since PD patients are vulnerable individuals with extended self care responsibilities and at risk for co morbidity secondary to insufficient sleep. sleep problems and fatigue can be improved by an individual non-pharmacological intervention .

Lane T,(2008), conducted a descriptive study for sleep disruption experienced by surgical patients in an acute hospital at Queen's Medical Centre Nottingham to describe the sleep experience of patients on surgical wards among 17 of the 24 patients 71% response rate. This study reveals that environmental factors were found to be strongly correlated with sleep disruption with a Pearson's coefficient of +0.795. Personnel factors correlated with sleep disruption, with Pearson's coefficient of + 0.590 although not as strongly as environmental factors. The study found that Environmental noise, pain and tension were most likely to disrupt the sleep of surgical patients.

Sendir M, (2007) was conducted as a descriptive study to evaluate the quality of sleep and effecting factors in hospitalized patients in a neurosurgery clinic of a University Hospital, in Turkey, between November 2005 and June 2006 among 102 patients using the "Questionnaire Form," which included socio-demographic, illness, sleep, and hospital characteristics, and the "Pittsburgh Sleep Quality Index" (PSQI). This study reveals that pain and noise are found to affect the sleep quality of hospitalized patients. Further it reveals that in neuro surgery ward 64.7% were found to have a poor quality of sleep prior to admission while poor quality of sleep determined 49% before being discharged from the hospital. So personal environmental factors influence the sleep quality.

Orhan Dogan, (2005) conducted a comparative study at the Cumhuriyet University Hospital in Turkey to evaluate and compare sleep quality and matched healthy controls among 150 (One hundred and fifty) hospitalized patients using socio demographic information form and the Pittsburgh sleep quality index. They compared sociodemographic and illness variables with sleep characteristics by this study reveals that patients in psychiatric ward experienced worse sleep quality than the other patients, worse in female patients than male patients, and worse sleep characteristics in patients than controls. Further it reveals health professionals must be educated about sleep and must provide intervention when needed since the enhancing of sleep quality accelerates to the recovery from illness.

Joan.E. Trammer (2003) conducted a study in Kinston general hospital , Canada , about the sleep experience of medical and surgical patients during a hospital stay among 110 patients (54 medical and 56 surgical) who were selected by random sampling and assessed during 3 consecutive nights patients self reported sleep quality using the Verran and Snyder sleep scale (VSH) and potentially disruptive factors using items from the factors influencing sleep questionnaire (FISQ).The study revealed that surgical patients experienced greater sleep disturbance on the first night, less sleep effectiveness and more need for sleep supplementation (p=.03) sleep effectiveness was assessed by across all 3 nights and they reported higher scores for sleep disturbances from pain in comparison to medical patients. Further it reveals that sleep experience of patients varies between diagnostic groupings and across the hospital stay, unit environment and personal factors, factors that are amenable to therapeutic interventions, strongly influence the sleep experience.

Edell-Gustafsson UM Et al (2001) conducted a descriptive comparative study at Sweden to evaluate the sleep quality in relation to anxiety, depression, selected psycho-physiological sleep disturbing symptoms, daytime dysfunctions according to poor sleep, and quality of life 1 year after percutaneous Tran luminal coronary angioplasty (PTCA) Then, females were compared with age matched males to examine any differences in sleep quality, psycho-physiological symptoms and quality of life. Among 22 females and 70 men assessed by mailed questionnaire. The study reveals that difficulty in maintaining sleep was the most common sleep complaint (42.4%) and physical tiredness/fatigue was the greatest consequence of disturbed

sleep (51.1) greater difficulties in initiating sleep and worse health related quality of life were revealed in females compared with males. Fragmented sleep is a problem partly because of psycho-physiological symptoms 1 year after PTCA. This study further reveals that reduced resilience to stress increasing vulnerability or diminished coping ability and poorer quality of life.

2.1.2 Literature related to back massage

Eisa Nasiri (2011) Conducted a descriptive comparative study at Razi hospital to assess the effect of acupressure and quality of sleep among 62 hemodialysis patients The experimental group received acu pressure 3 times per week while undergoing dialysis for 4 weeks. Control group received routine care. Quality of sleep was measured using Pittsburgh sleep quality index (PSQI) before and after intervention. The study reveals significant differences between the acupressure group and the control group in Pittsburgh Sleep Quality Index subscale scores of subjective sleep quality, sleep duration, habitual sleep efficiency, sleep sufficiency, and global Pittsburgh Sleep Quality Index scores. This study further reveals that effectiveness of acu pressure on improving the quality of sleep in hemo dialysis patients and can be used as a noninvasive method for sleep-disorders in these patients.

Sangeetha MacCune (2010) conducted a quasi experimental design at Kamala Nehru ward of Christian Medical College, Vellore to assess the effect of back massage and quality of sleep among post-operative CABG and valve replacement surgery among 60 patients. Effectiveness of back massage as quality of sleep is significantly improved in experimental (P=0.000) than in control groups. In experimental group during pre test, 28 (98.3%) subjects responded about inability to sleep for more than 5 hours during last night. After the intervention of back massage this inability decreased to 11 (36.7%) subjects and 21 (63.33%) subjects slept for more than 5 hours at night. This study reveals that back massage is perceived by patients as soothing, relaxing and effective sleep inducing measure.

Flavia Baggio nerbass (2010) was conducted a Comparative study to assess the effects of massage therapy on sleep quality after coronary artery bypass graft surgery at Brazil among Fifty-seven (57)cardiopulmonary artery bypass graft

surgery patients, 17 of whom were excluded due to postoperative complications, the remaining 40 participants were control group (n = 20) and massage therapy (n = 20) groups.. This study reveals that Massage therapy group had fewer complaints of fatigue on Day 1 (p=0.006) and Day 2 (p=0.028) then they reported more effective sleep during all three days (p-019) when compared with the participants in the control group. This study reveals that massage therapy is an effective technique for improving patient recovery from cardiopulmonary artery bypass graft surgery because it reduces fatigue.

Rose Adams (2010) conducted a descriptive study to evaluate the effects of massage therapy on inpatient pain level in acute care settings at USA among Hospital in patients (***n*** = 53) from medical, surgical, and obstetrics units by each receiving one or more massage therapy sessions averaging 30 minutes each and the number of sessions received depended on the length of the hospital stay. Pain levels before and after massage therapy were recorded using a 0 – 10 visual analog scale. Before massage, the mean pain level recorded by the patients was 5.18 [standard deviation (SD): 2.01]. After massage, the mean pain level was 2.33 (SD: 2.10), qualitative data illustrated improvement in all areas, with the most significant areas of impact reported being overall pain level, emotional well-being, relaxation, and ability to sleep. Further this study reveals that integration of massage therapy into the acute care setting creates overall positive results in the patient's ability to deal with the challenging physical and psychological aspects of their health condition. The study demonstrated not only significant reduction in pain levels, but also the interrelatedness of pain, relaxation, sleep, emotions, recovery, and finally, the healing process.

Mary Walton (2009) was conducted a comparative study among 60 adult clients who were confined to bed in orthopedic wards of St John's Medical College and Hospital (SJMCH), Bangalore , using one group pre-test post-test design.. Comparison of Physiological Components before and after effleurage back massage t (2, 58) = 4.98 p=0.01. Comparison of pain level before and after effleurage back massage t (59) = 2.000 p=0.05. Comparison of anxiety levels before and after effleurage back massage t (59) = 2.000 p=0.05 .This study reveals that effleurage back massage was effective on all the physiological components blood pressure, heart rate ,respiratory rate ,pain and anxiety levels . The importance of 'hands on' technique

that brings the power of touch to therapeutic relationships. Hence she states that nurses could plan this intervention of back massage as a relaxation technique.

Richards KC (1998) conducted a descriptive comparative study at USA to determine the effects of (1) a back massage and (2) combined muscle relaxation, mental imagery, and a music audiotape on the sleep of older men with a cardiovascular illness who were hospitalized in a critical care unit. Sixty-nine (69) subjects were randomly assigned to a 6-minute back massage (n=24); a teaching session on relaxation and a 7.5-minute audiotape at bedtime consisting of muscle relaxation, mental imagery, and relaxing background music (n=28); or the usual nursing care (controls, n=17). Descriptive statistics showed improved quality of sleep among the back-massage group. This study reveals that patients in the back-massage group slept more than 1 hour long than patients in the control group. It shows Back massage is useful for promoting sleep in critically ill older men.

2.1.3. Literature related to music therapy

Min-Jung Ryu (2011) conducted a comparative study on the effect of earplug-delivered sleep-inducing music on sleep in persons with percutaneous Transluminal coronary angiography in the cardiac care unit. at K University Hospital, Korea among randomly assigned 58 subjects, who were divided in to two groups experimental Group (N=29) and Control group (N=29). The study reveals that Participants in the experimental group reported that the sleeping quantity and quality were significantly higher than control group $t = 3{\cdot}181$, $p = 0{\cdot}002$, $t = 5{\cdot}269$, $p < 0{\cdot}001$, respectively). This study further reveals that sleep-inducing music significantly improved sleep in patients with percutaneous Trans luminal coronary angiography at a cardiac care unit.

Hernandez-Ruiz E. (2005) conducted a experimental study at USA to explore the effect of a music therapy procedure on the reduction of anxiety and improvement of sleep patterns among 28 abused women in shelters, on 5 consecutive days for half-hour sessions, Stait anxiety scale was used to measure sleep quality This study reveals that music therapy constituted an effective method for reducing anxiety levels, and also significant effect sleep quality for the experimental group, but not for the control

group. This study further reveals that Reduction of anxiety and improvement of sleep quality can be considered as increased personal resources, and seem feasible through the use of music therapy.

Thorgaard B (2004) conducted a experimental study at Denmark to investigate the effect of a specially selected music sound environment on the feeling of wellbeing of adult, lightly sedated patients in a Cardiac Catheter Laboratory undergoing invasive procedures among 193 patients (n = 99) who listen the music to the procedure or to a non music group (n=94) interviewed by a questionnaire about their opinion of the sound environment in the room and about their feeling of well being. In the music group 91% of the patients defined the sound environment as very pleasant. 8 % of the patients with no opinion on the sound environment. In the music group 56% of the patients says that sound environment is very pleasant only 38% of the patients have no opinion on the sound environment. These patients expressed that music made them feel less tense more relax and safe. The results were not related to age, sex or procedure, based on the negative expectations and the positive experience of the patients with regard to music environment. This study reveals that specially selected music had a positive effect on the wellbeing of patients and their opinion on the sound environment during invasive cardiac procedures. Based on the negative expectations and the positive experience of the patients with regard to music environment, specially selected music should be a part of the sound environment in the Cardiac Catheter Laboratory.

Azad N (2003) conducted a comparative study to evaluate the hospitalized patients preference in treatment of insomnia pharmacological vs non pharmacological among 100 patients at Ottawa hospital Canada , using benzodiazepines (BZDs) Fifty-one (51) per cent were younger than age 65. Female participants are more willing to consider NDAs ($p<0.01$). First time users of BZDs were by7 far more receptive to NDA remedies that were chronic users of BZDs ($p<0.002$) A significant number of participants who were receiving short acting BZds were willing to try an NDA ($p<0.001$).Participants interested in NDA therapies expressed preferences for massage therapy, sleep hygiene, music and relaxation techniques ($p<0.001$). Our hypotheses were that an attitudinal difference exists between acute and chronic users of BZDs towards NDAs (Non drug alternatives) and that inpatients who were prescribed BZD (Benzodiazepines) have also received proper information about alternative therapies.

This study reveals that Participants interested in NDA therapies expressed preferences for massage therapy, sleep hygiene, music and relaxation techniques ($P<0.001$).

Richards K (2003) conducted a comparative study to evaluate the efficacy of complementary and alternative therapies to promote sleep promotion in critically ill patients at USA Among 7 studies three on environmental and one each on massage music therapeutic touch and melatonin that examined the effect of complimentary and alternative therapies. This study reveals that Massage, music therapy, and therapeutic touch promote relaxation and comfort in critically ill patients and should be routinely applied by ICU nurses who have received training on how to administer these specialized interventions. Further the researcher states that ICU nurses implement music therapy, environmental interventions, therapeutic touch, and relaxing massage to promote sleep in critically ill patients.

Levin YaI. (1997) conducted a experimental study to evaluate the effects of Music of the Brain at Moscow which is the new non pharmacological method of treating insomnia among 58 patients, who were divided into two groups Based on Clinical, questionnaire, psychological, and electrophysiological methods. Group 1 (44 patients) formed the experimental group, and Group 2 (14 patients) formed the "placebo" group. This study reveals that high effectivity of Music of the brain for patients with insomnia was combined with an absence of side effects and complications.

Mornhinweg GC (1995) conducted a descriptive pilot study to assess the effectiveness of music for sleep disturbances in the elderly among Twenty-five(25) elderly people with self-reported sleep disturbances .All of the participants were given classical and New Age music to listen to before bedtime and when a sleep disturbance was identified. The participants were asked to keep daily records to assess the efficacy of the music in inducing sleep. This pilot study reveals that twenty-four (96%) of the participants had improved sleep after listening to the music.

Zimmerman L (1996) conducted a experimental study at USA to determine the effects of second and third day postoperative music interventions (music, music video) on pain and sleep among 96 postoperative patients having CABG surgery. The McGill Pain Questionnaire (MPQ) was administered. Pain decreased from Day 2 to Day 3 for all three groups. For the evaluative component of pain, those in the music group had significantly ($F [2, 93] = 4.74$, $p < .05$) lower scores on postoperative Day 2 than the rest period control group. Effects of the intervention on sleep as measured by the Richard Sleep Questionnaire indicated that the video group had significantly ($F [2, 92] = 3.18$, $p < .05$) better sleep scores than the control group on the third morning.

2.2 CONCEPTUAL FRAME WORK

A Conceptual framework is an analogous to the frame of a house, just as the foundation supports a house. A conceptual framework provides a rationale for prediction about the relationship among variables of a research study.

Polit and Hungler state that a conceptual frame work is an interaction of concept or abstraction that is assembled together in some rationale scheme by virtue of their relevance to a common theme. It is a device that helps stimulate research and the extension of knowledge by providing both direction and impetus. A concept is an abstract idea, or mental image of phenomena of reality.

A framework is a basic structure supporting anything. A conceptual frame work or model is a basic structure or outline of abstract ideas or images that represents reality.

This study indented to assess effectiveness of Therapeutic back massage and Music therapy on Quality of sleep among Hospitalized patients with inadequate sleep at Post operative ward.

The conceptual frame work selected for the study is based on Imogene M Kings “Goal attainment Model “.

The theory focus on interpersonal systems reflects king's belief that the practice of nursing is differentiated from that of other health professions by what nurses do with and for individual. The major elements of theory of goal attainment are seen ' in the interpersonal systems in which two people, who are usually strangers, come together in a health care organization to help and be helped to maintain a state of health that permits functioning in roles. The concepts of theory are perception, action, interaction and transaction. The concepts are interrelated in every nursing situation. These terms are defined as concepts in the conceptual framework.

1. Perception

Perception is 'each person's representation of reality the element of perception are importing of energy from the environment and organizing it by information, transforming energy from the environment and organizing it by information, transforming energy, processing information and exporting information in the form of overt behaviors. In this study investigator perceives, needs and problems of post operative patients. Post operative patients are having inadequate sleep.

2. Action

Action refers to activity to achieve the goal what the individual perceives. In the study it is mutual goal setting to fulfill the needs and problems of post operative patients. Investigator prepares back massage vs Music therapy to asses the effectiveness. The patients motivated to express his/her feelings, thoughts and ideas and the needs.

3. Interaction

Interaction refers to the perception and conception between a person and environment or between two or more persons. In this study, investigator administers the Back Massage and Music therapy to assess the effectiveness. Post operative patients are responding Non pharmacological methods such as Back massage and Music therapy.

4. Transaction

It is process of interaction in which human beings communicate with the environment to achieve goals that are valued and directs human behavior. In this study clients attains the goal i.e fulfill their needs and satisfied with Back Massage and Music therapy.

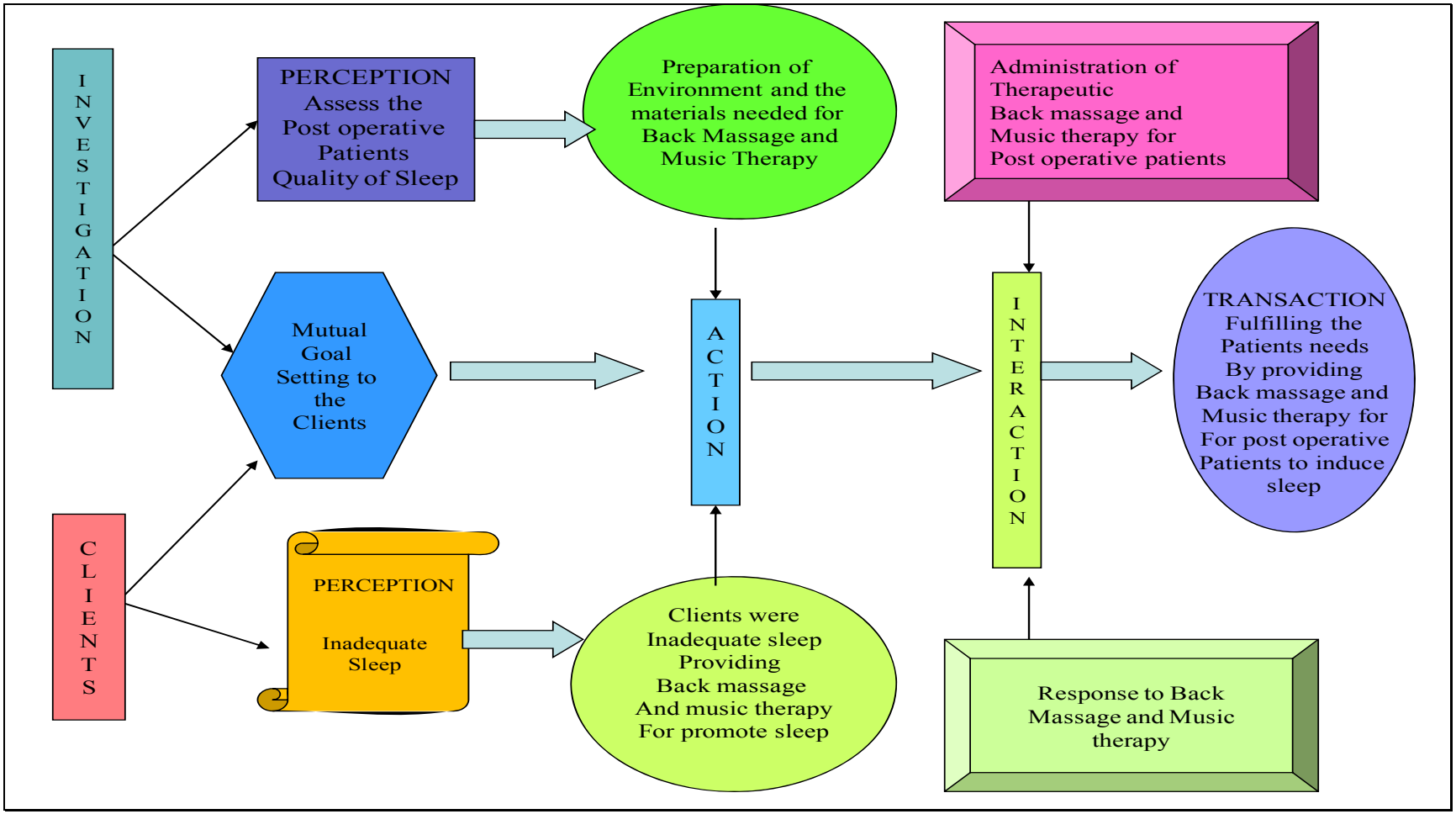

Fig 1: Modified Conceptual Framework Of The Study Based On Imogene M King's Goal Attainment

CHAPTER III

METHODOLOGY

Research methodology is a way to systematically solve the research problem. It indicates the general pattern for organizing the procedure for empirical study together with the method of obtaining valid and reliable data for the problem under investigation. Research methodology is a way to systematically solve the research problem.

This chapter deals with the research approach, design, setting of the study, population criteria for sample selection, tool, scoring procedure, validity, reliability, Pilot study, procedure for data collection and plan for data analysis.

This study examined the effectiveness of Therapeutic back massage and Music therapy on Quality of sleep among Hospitalized patient with inadequate sleep at Post operative ward.

The purpose of this section is to communicate to the readers what the investigator did to solve the research problem or to answer research questions.

3.1 RESEARCH APPROACH

Research approach used for this study is experimental approach.

3.2 RESEARCH DESIGN:

A Quasi experimental non equalant control group pretest post test design was used for the study. The sample consists of 60 subjects.

Group-I - Back Massage 30 subjects.

Group II - Music therapy 30 subjects were selected on purposive sampling technique.

Group	Day-1 Pre-test	Day -2		Day- 3	
		Treatment	Posttest	Treatment	Posttest
Group I	**OA 1**	**X1**	**OA 2**	**X1**	**OA 3**
Group II	**OB 1**	**X2**	**OB 2**	**X3**	**OB 3**

OA1 : Measurement of the subject before administering back massage (pretest) SAQS in the morning.

X1 : Intervention Back massage (Effleurage, Circular kneading)

OA2 : Measurement of subjects after administering back massage (post-test) on day-2 SAQS in the morning.

X1 : Intervention Back massage (Effleurage, Circular kneading)

OA3 : Measurement of subjects after administering back massage on (post test) day-3 SAQS in the morning.

OB1 : Measurement of the subjects before administering music therapy by (day-1 and by SAQS in the morning.

X2 : Intervention Music therapy for 10 minutes.

OB2 : Measurement of subjects after administering music therapy an (day-2) SAQS scale in the morning.

X2 : Intervention Music therapy for 10 minutes.

OB3 : Measurement of subjects after administering music therapy on (day-3) by SAQS scale in the morning.

As the study did not have control group, it is not a true experimental design.

The sample was selected by purposive sampling and manipulation was done in the form of administering back massage to Group I subjects and music therapy to Group II subjects.

Repeated treatment pretest post-test design was adopted for the study,. In repeated pretest post test design (O1xO2 xO3) the investigator introduced a base measure before and after the intervention. In this study design twice the same intervention is used and it is depicted as X. Two groups of patients were selected. Group I is given back massage; and Group II is given music therapy. In the present study, the base measure was quality of sleep. Back massage and music therapy were the independent variable.

3.3 RESEARCH VARIABLES:

Independent Variables

Back Massage and Music Therapy.

Dependent Variables

Quality of sleep.

3.4 SETTING OF THE STUDY:

Research setting is the physical location and conditions, in which data collection takes place in a study.

The study was conducted in Post Operative ward at Govt.Rajaji Hospital, Madurai. It is 2218 Bedded hospital ,a multi-specialty hospital, which is attached with Madurai Medical College, It is located in the heart of the Madurai city. It is the largest hospital in the south part of Tamilnadu. It provides tertiary health care services to public, who come from southern districts of Tamilnadu. The hospital has various post operative wards with high tech life saving equipments.

Main Study:

Study was conducted in Post Operative ward of Government Rajaji Hospital Madurai-20.

PILOT STUDY:

Pilot study was conducted with 10 samples at Post Operative ward Government Rajaji Hospital, Madurai-20.

3.5 POPULATION

Target Population

The patients admitted in Post operative ward with inadequate sleep at Government Rajaji Hospital Madurai-20.

Accessible Population

The patients at Post-Operative ward age group of 21 to 60 years admitted at Government Rajaji Hospital Madurai-20.

The study sample comprised of patients at post operative ward who have inadequate sleep at Government Rajaji Hospital Madurai-20

3.6 SAMPLE

Clients with inadequate sleep in Post operative ward at Government Rajaji Hospital madurai-20.

3.7 SAMPLE SIZE:

Sample size is 60 out of 60

Group I for Back Massage Therapy – 30 subjects.

Group II for Music Therapy - 30 subjects.

3.8 SAMPLING TECHNIQUE

Purposive sampling technique was adopted to select the subjects who had inadequate sleep.

3.9 CRITERIA FOR OF SAMPLE SELECTION

INCLUSIVE CRITERIA:

1. 1.Both Genders who have undergone surgery with inadequate sleep after 3rd day of post operative period.
2. Subjects between age group of 21 to 60 years who have undergone surgery and inadequate sleep.
3. Subjects who were able to verbalize the sleep pattern
4. Subjects who could speak Tamil or English.
5. Subjects who are not critically ill.

EXCLUSIVE CRITERIA:

Subjects who were

1. Unconscious.
2. Not willing to participate.
3. Taking medication for sleep.
4. Hearing deficit.

3.10 DEVELOPMENT AND DESCRIPTION OF THE TOOL:

The tool consists of 3 sections

Section I	Demographic Variables and Clinical variables.
Section II	Subjective Assessment of Quality of Sleep Scale
Section III	a. Opinion regarding the effect of Back Massage by Group I subjects.
	b. Opinion regarding the effect of Music Therapy by Group II subjects.

Section I

Demographic profile consists of Age, Sex, Marital Status, Date of Admission, Present illness, Clinical Variables such as Types of anesthesia, Types of surgery ,vital signs and types of medications.

Section II

It consists of 10 questions related to subjective assessment of Quality of Sleep scale.

Section III

a. Opinion regarding the effect of Back Massage by Group I subjects .

b. Opinion regarding the effect of Music Therapy by Group II subjects.

3.11 SCORING TECHNIQUE

Section I

It consists of Demographic Variables and Clinical Variables.

Scoring criteria is frequency and percentage distribution for section I.

Section II

It consists of 10 questions related to subjective assessment of Quality of Sleep scale. Only 9 questions are having scoring measures . Maximum score is 15.

Criterion measures

I.	Adequate sleep	(80-100%)	(12-15)
II.	Fairly adequate sleep	(50-80%)	(8-11)
III.	Inadequate sleep	(30-50%)	(4-7)
IV.	Highly Inadequate sleep	(<30%)	(0-3)

10^{th} question scoring criteria is frequency and percentage distribution.

Section III

a. Opinion regarding Back massage Therapy

b. Opinion regarding Music Therapy

Scoring criteria is frequency and percentage distribution for section III.

3.12 TESTING OF THE TOOL

Validity

After construction of questionnaire for "A Comparative study on the Effectiveness of Therapeutic back massage and Music therapy on the Quality of sleep among Hospitalized patient with inadequate sleep at Post operative ward Government Rajaji Hospital, Madurai". It was tested for its validity and reliability.

Validity of the tool was assessed using content validity. Content validity was determined by four Nursing experts and one Medical Officer in the field of surgery and one clinical psychologist from department of psychiatry. They suggested certain modifications in tool. After the modifications they agreed this tool for assessing the effectiveness of back massage and Music therapy on the Quality of sleep among Hospitalized patient with inadequate sleep at Post operative ward

Reliability

Reliability of the tool was assessed by using split half method and interrater method. Correlation coefficient are 0.80 and 0.82. These coefficient is very high and it is good tool for assessing the effectiveness of back massage and Music therapy on the Quality of sleep among Hospitalized patient with inadequate sleep at Post operative ward

3.13 PILOT STUDY

Pilot study was conducted in the post operative ward at Government Rajaji Hospital Madurai -20 in order to test the feasibility relevance and practicability of the study. This study was conducted on 5+5 patients with inadequate sleep on 3rd , 4th and 5th post operative day of patients respectively . After obtaining the permission from the Principal, College of Nursing, Madurai Medical College, Madurai-20 and the Dean, written consent will be obtained from the subjects after self introduction and explanation regarding the nature of study through purposive sampling. Pilot study was conducted for the period of 1 week among 5 + 5 patients with inadequate sleep at post operative ward at Government Rajaji Hospital Madurai-20. The tool was found to be feasible and no change was made after the pilot study. The data were analyzed using descriptive and inferential statistics.

3.14 DATA COLLECTION PROCEDURE

Prior to data collection the necessary permission from the Principal, College of Nursing, Madurai Medical College, Madurai-20 and the Dean, written consent obtained from the subjects after self introduction and explanation regarding the nature of study.

The Data collection procedure was described as follows:

The Data collection was collected for 4 weeks.

The investigator selected the patients with inadequate sleep at post operative ward on (3rd post Operative day onwards). The data collection period extended from 01.09.2011 to 30.09.2011. The subjects under the study were selected through purposive sampling. The subjects were selected on 3rd of post operative period. 4 to 6 subjects were selected at a time and 1st day night (Day 1 Pre test)Quality of sleep assessed. Next morning, interviewed using subjective assessment of Quality of Sleep scale, 2nd night (Day 2) these six subjects were given back massage for 10 minutes (Group 1 subjects) (9-10 Pm). And 3rd night same 4 to 6 subjects were given back massage for 10 minutes. Fourth day morning interviewed using Subjective Assessment of Quality of Sleep Scale (SAQS) . In Group I (30 subjects) were selected. (01.09.2011 to 15.09.2011) and pretest (day I) and post tests (Day 2 and Day 3) were done for 3 consecutive days for 4 to 6 subjects. These steps for continued for 15 days. In Group II (30 subjects) were selected (16.09.2011 to 30.09.2011) and daily 4 to 6 subjects were interviewed for 3 consecutive days. For selected 4 to 6 subjects 1 day night pre test sleep quality assessed. And 2nd day morning interviewed by subjective assessment of quality of sleep scale. 2nd night (Day 2 post test) music therapy was given for 10 minutes (9 to 10 PM) and 3rd day morning interviewed by subjective assessment of quality of sleep scale . These same 4 to 6 subjects were given music therapy on 3rd night (Day 3 –Post test) and 4th day morning interviewed using Subjective Assessment of Quality of Sleep Scale (SAQS) These step were continued for 15 days. And interviewed in the morning for 3 consecutive days. (Day 1-Pretest, Day 2 night -Post test ,Day 3 -Post test).

3.15 DATA ANALYSIS

The data analysis involves the translation of information collected during the course of research project in to an interpretable and manageable form. It involves the use of statistical procedures to give an organization and meaning to the data. Descriptive and inferential statistics will be used for data analysis. To compute the data, a master data sheet was prepared by the investigator.

1. Demographic profile containing sample characteristics would be analyzed using frequency and percentage.
2. Sleep scores would be analyzed by computing frequency, percentage, mean, and standard deviation.
3. Paired ‘t’ test would be used to find out the effectiveness of back massage and Music Therapy among Group I and Group II.
4. Independent ‘t’ test would be used to compare the level of quality of sleep between the Group I and Group II..
5. Chi-square test would be used to find out the association between pre-test sleep score and selected demographic variables. For the interpretation of hypotheses and findings, the level of significance would be set at 0.05.

3.16 PROTECTION OF HUMAN RIGHTS

The research proposal was approved by the dissertation committee prior to conducting the pilot study and the main study. The written permission obtained from the Principal, College of Nursing, Madurai Medical College, Madurai-20 and the Dean, Written consent was obtained from the subjects after self introduction and explanation regarding this nature of study.

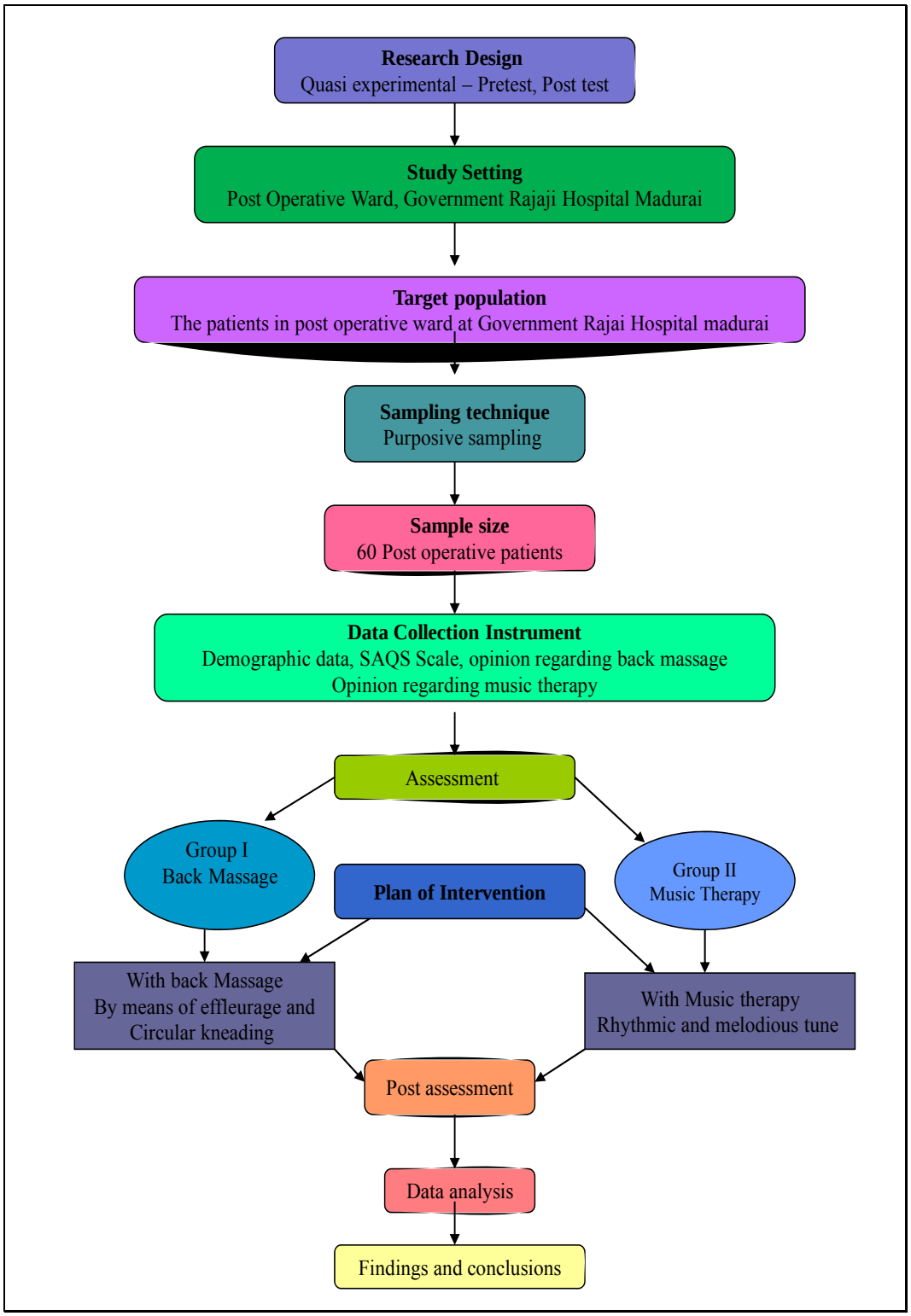

Fig 2: Schematic Representation of the Study

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

James A Fain (2003) defines data analysis as the systematic organization and synthesis of research data and the listing of research hypothesis using those data.

Abdullah and Levin (1979) have stated the interpretation of tabulated data can bring to light the real meaning of the findings of a study.

This chapter deals with 60 post operative patients to evaluate the effectiveness of Therapeutic back massage and music therapy on Quality of sleep among hospitalized patients with inadequate sleep.

The purpose of the data analysis is to translate information collected during the course of the study into an interpretable form so that the research questions could be answered. Master sheet was prepared and the data was analyzed based on the objectives and hypothesis using descriptive and inferential statistics.

Organization of the findings

In order to assess the effectiveness of Therapeutic back massage and music therapy on Quality of Sleep, data were tabulated, analyzed and interpreted using descriptive and inferential statistical method. The data were presented under the following headings.

Section I : Determination of Quality of sleep for the selection of subjects.

Section II : Description of the Demographic Character and Clinical Profile of the Subjects

Section III : Quality of sleep of patients

- Quality of sleep of patients before and after back massage (Group I)
- Quality of sleep of patients before and after music therapy (Group II)
- Comparison of Quality of sleep between Group I and Group II.

Section IV

- Comparison of pre test and post test Quality of sleep score.
- Effectiveness of Back Massage and Music Therapy in pretest and post test.
- Comparison of Sleep Efficiency Ratio score of subjects post test of Group I and Group II
- Reason for disturbed sleep by the subjects in Group I and Group II

Section V

- Associate the quality of sleep with selected demographic variable.
- Opinionare regarding Back Massage (Group I)
- Opinionare regarding Music Therapy (Group II)

Section I

Determination of Quality of Sleep for the Selection of Subjects.

This section deals with the characteristics of the Quality of sleep of post operative patients in terms of percentage.

Table 1

Assessment of Pretest Quality of Sleep Scale Score of subjects with 3rd Post Operative Day

	No of patients	Min- max Sleep score	Mean ± SD	% of quality of sleep
Group I (Back massage)	30	0 -15	6.13 ± 0.90	40.8%
Group II (Music therapy)	30	0 -15	6.07 ± 0.91	40.5%

The data presented in Table no 1 depicts the pretest Quality of sleep of patients in Group I and Group II before back massage and Music therapy as measured by Subjective Assessment of Quality of Sleep Scale.

The findings of the study demonstrated that, on an average, 6.13 quality of sleep score out of 15 in Day1in group I., On an average, 6.07 quality of sleep score out of 15 in Day1 in Group II .Or we can say it is 40.8 % in group I and it is 40.5% in group II.

Section II

Description of the Demographic Character and

Clinical Profile of the Subjects

This section deals with the description of sample characteristics express in frequency and percentage. The data is presented in Table II

Table 2

Distribution of the Subjects according to the

Demographic Profile

Demographic variables		Group			
		Back massage		Music therapy	
		n	%	n	%
Age	21 -30 yrs	8	26.7%	9	30.0%
	31 -40 yrs	8	26.7%	11	36.7%
	41 -50 yrs	8	26.7%	7	23.3%
	51 -60 yrs	3	10.0%	1	3.3%
	> 60 yrs	3	10.0%	2	6.7%
Sex	Male	14	46.7%	12	40.0%
	Female	16	53.3%	18	60.0%
Religion	Hindu	25	83.3%	25	83.3%
	Muslim	3	10.0%	3	10.0%
	Christian	2	6.7%	2	6.7%
Marital status	Single	7	23.3%	10	33.3%
	Married	23	76.7%	20	66.7%
Date of admission	3rd day	8	26.7%	9	30.0%
	4th day	12	40.0%	12	40.0%
	5th day	10	33.3%	9	30.0%
Present illness	Appendectomy	18	60.0%	20	66.7%
	Mastectomy	5	16.7%	4	13.3%
	herniorraphy	5	16.7%	4	13.3%
	cholecystectomy	2	6.7%	2	6.7%

The data represented in table No. 2 shows the following findings.

Age:

Most of the subjects (80%) in Group I and (90%) in Group II were below 50 years of age in both of the groups.

Sex:

Majority of the subjects 16 (53.3 %) in group I . And most of the subjects 18 (60%) in Group II were females.

Religion:

Most of the subjects 25 (83.3%) were Hindu, in both Group I and Group II.

Marital Status:

Most of the subjects 23 (76.7%) in Group I and 20 (66.7%) in group II were married.

Number of Post Operative Day:

Most of the subjects 8 (26.7%) in 3rd Post operative day. 4th day 12 (40%) 5th day 10 (33%) in Group I. and most of the subjects 9 (30%) in 3rd Post operative day. 4th day 12 (40%) 5th day 9 (30%) in Group II were selected.

Present illness:

Most of the subject 18(60 %) of the subjects in group I and 20(66.7%) in Group II were had appendectomy , 5(16.7 %) of the subject in Group I and 4(13.3%) of the subjects in Group II were had mastectomy, 5(16.7%) of the subjects in Group I and 4(13.3 %) of the subjects in Group II were had herniorraphy 2(6.7%) in Group I and Group II were had cholecystectomy.

Table 3

Clinical Variables and Vital Signs of Post Operative Patients

Clinical Variables		Group			
		Back Massage		Music Therapy	
		n	%	n	%
Type of Anesthesia	General	10	33.3%	8	26.7%
	Spinal	20	66.7%	22	73.3%
Types of medication	Antibiotics	26	86.7%	28	93.3%
	Others	4	13.3%	2	6.7%
Temperature	98.4° F- 99°F	27	90.0%	27	90.0%
	99°F -100° F	3	10.0%	3	10.0%
Pulse	80 - 90/mt	27	90.0%	27	90.0%
	90 - 100 /mt	3	10.0%	3	10.0%
Respiration	10 - 20 /mt	23	76.7%	22	73.3%
	20 - 30 /mt	7	23.3%	8	26.7%
BP	120/80- 140/80 mm Hg	30	100.0%	30	100.0%
Pain	Mild	30	100.0%	30	100.0%
sp_o2	90 -100	30	100.0%	30	100.0%

The data presented in table No. 3 shows the clinical and vital signs of patients those who are participated in this study.

The findings of the study demonstrated that, 10 (33.3%) in Group I and 8 (26.7%) in Group II were General Anesthesia. Most of the patients 20 (66.7%) in Group I and, 22 (73.3%) in Group II were Spinal Anesthesia and other variables are within normal limits. Majority of the subjects 26 (86.7%) in Group I, 28 (93.3%) were had antibiotics.

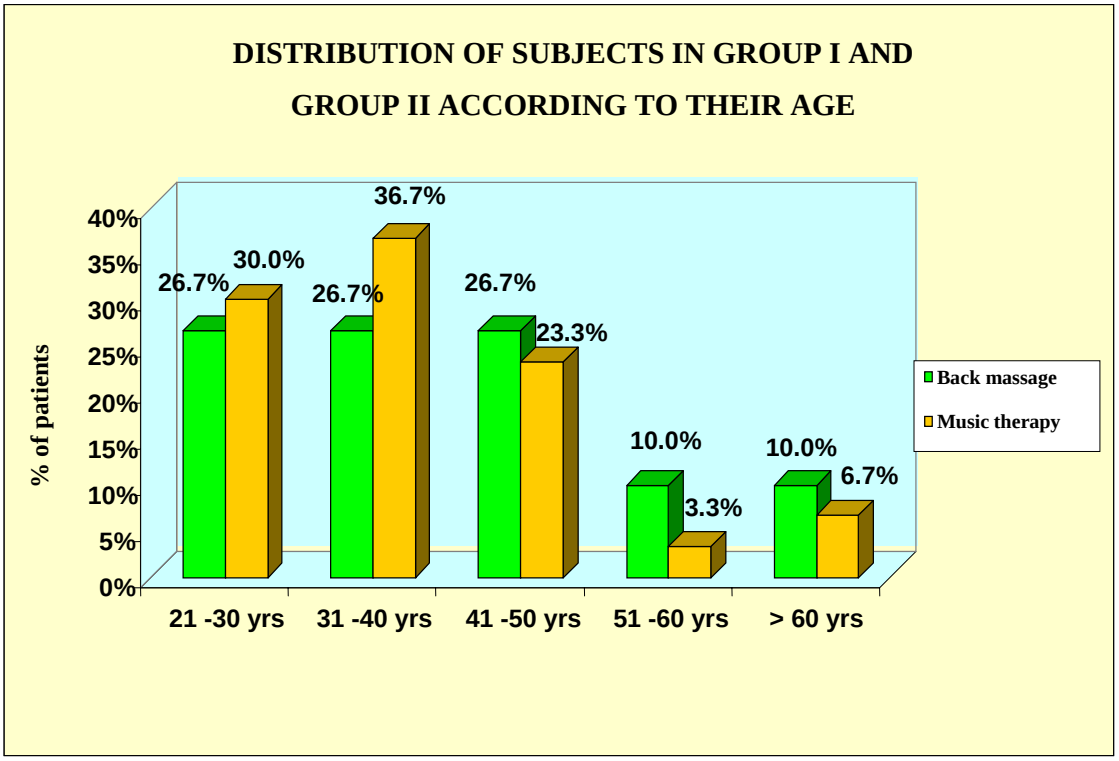

Fig 3: Percentage distribution of Age of the subjects in Group I and Group II

The above figure shows that most of the subjects were 24(80%) below 50 years of the age in the Group I and 27(90%) in Group II according to their age.

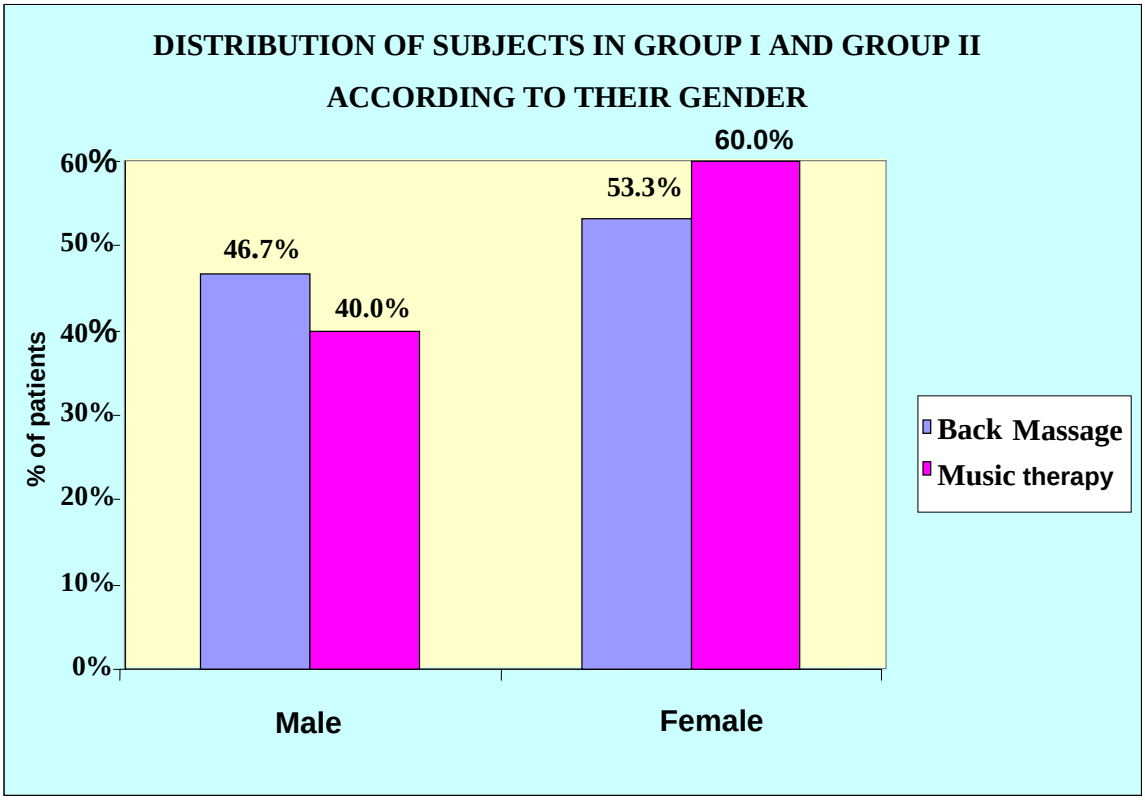

Fig 4: Percentage distribution of Gender of the subjects in Group I and Group II

The above figure shows that most of the subjects were 16 (53.3 %) in Group I and most of the subjects 18 (60%) in Group II were females and 14 (46.7%) in Group I and 12 (40%) in Group II were males.

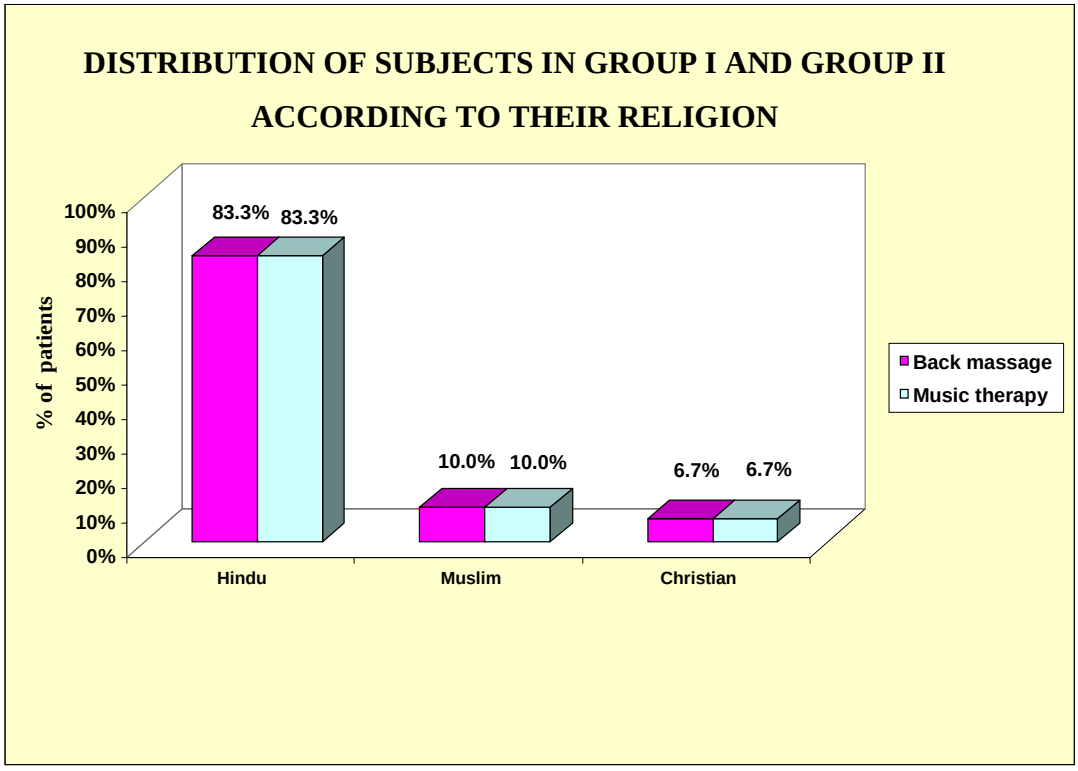

Fig 5: Percentage distribution of Religion of the subjects in Group I and Group II.

The above figure shows that most of the subjects most of the subjects 25 (83.3%) were Hindu, in both Group I and Group II and 3 (10%) were Muslim in both Group I and Group II and 2 (6.7%) Christian in both Group I and Group II.

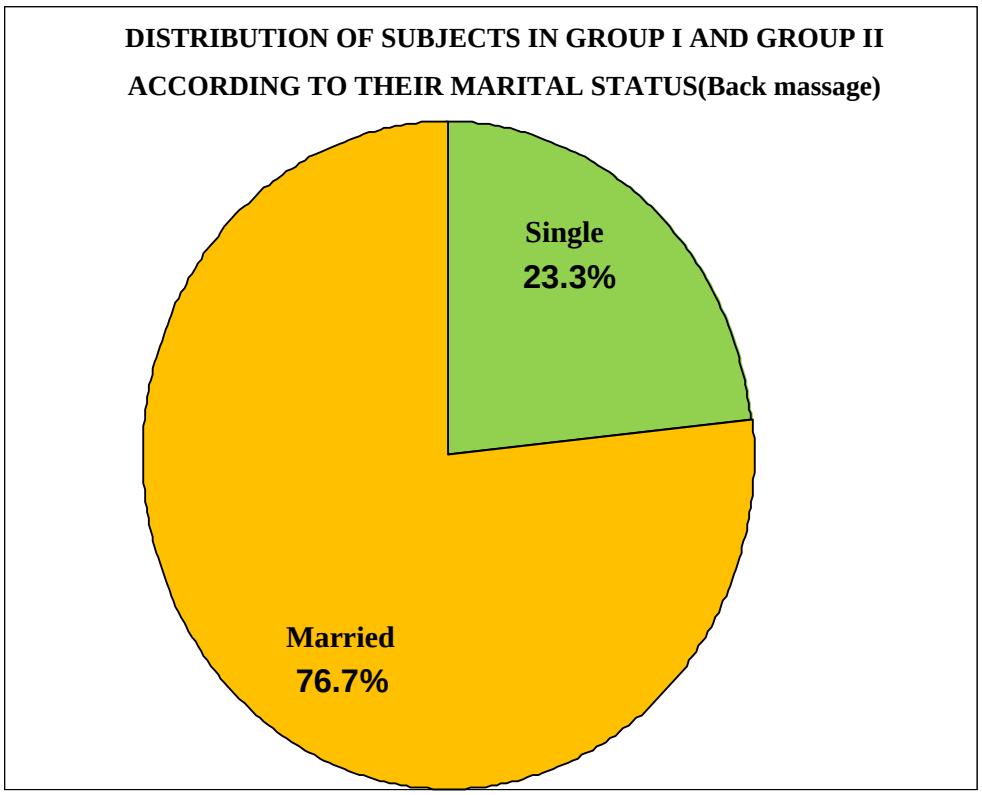

Fig 6: Percentage distribution of marital status of the subjects in Back Massage (Group I)

The above figure shows that most of the subjects 23(76.7%) of the study population were married in Back Massage (Group I) and 7 (23.3 %) were single in Back Massage (Group I).

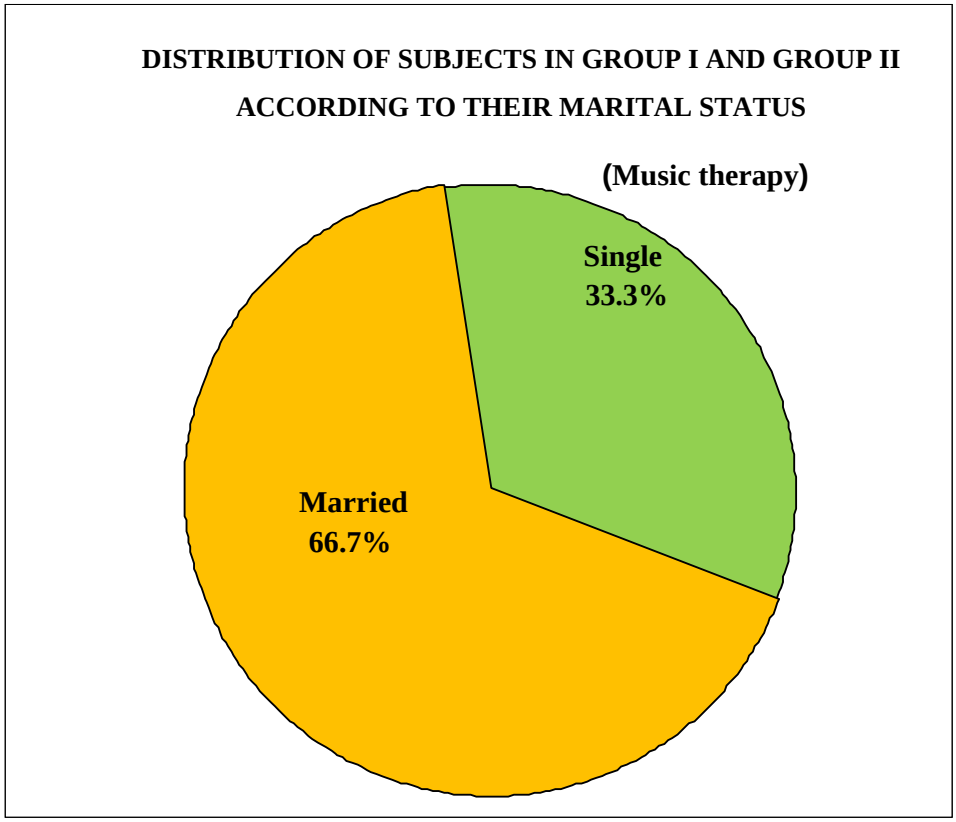

Fig 7: Percentage distribution of marital status of the subjects in Music Therapy (Group II)

The above figure shows that most of the subjects 20 (63.7%) of the study population (66.7%) were married in Music therapy (Group II) and 10 (33.3%) were single in Music therapy (Group II).

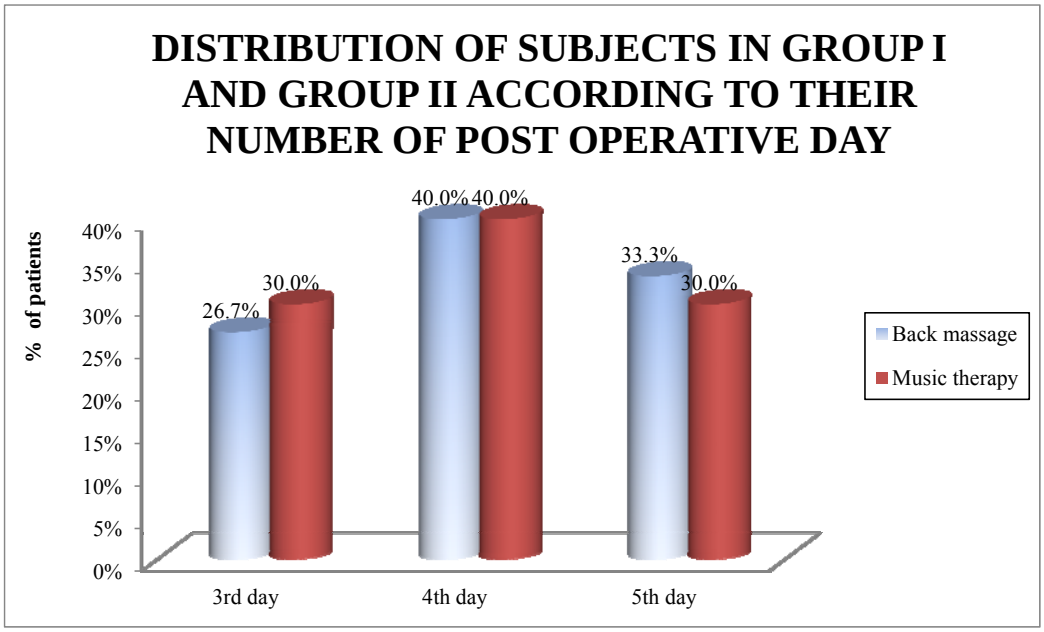

Fig 8: Percentage distribution of Number of post operative day of the subjects in Back massage (Group I) and Music Therapy (Group II)

The above figure shows that most of the subjects 8 (26.7%) in 3rd Post operative day. 4th day 12 (40%) 5th day 10 (33%) in Group I. and most of the subjects 9 (30%) in 3rd Post operative day. 4th day 12 (40%) 5th day 9 (30%) in Group II were selected.

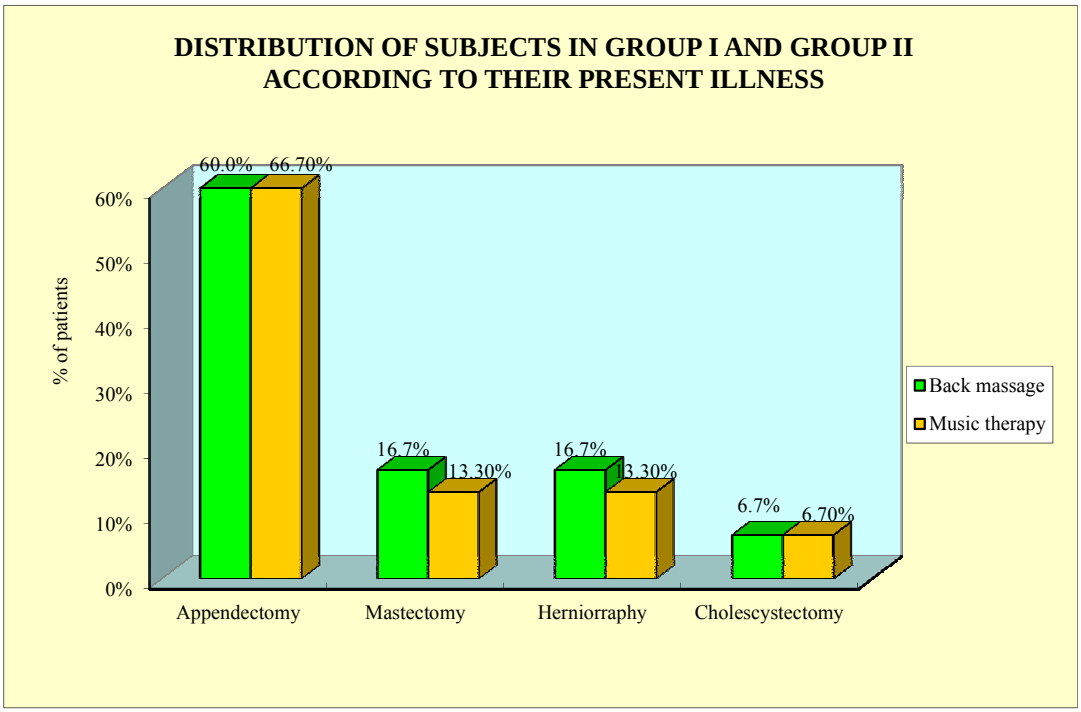

Fig 9: Percentage distribution of Present illness of the subjects in Back massage (Group I) and Music Therapy (Group II)

The above figure shows that most of the subjects 18 (60 %) of the subjects in group I and 20(66.7%) in Group II were had appendectomy , 5 (16.7 %) of the subject in Group I and 4(13.3%) of the subjects in Group II were had mastectomy, 5(16.7%) of the subjects in Group I and 4(13.3 %) of the subjects in Group II were had herniorraphy 2 (6.7%) in Group I and Group II were had cholecystectomy,

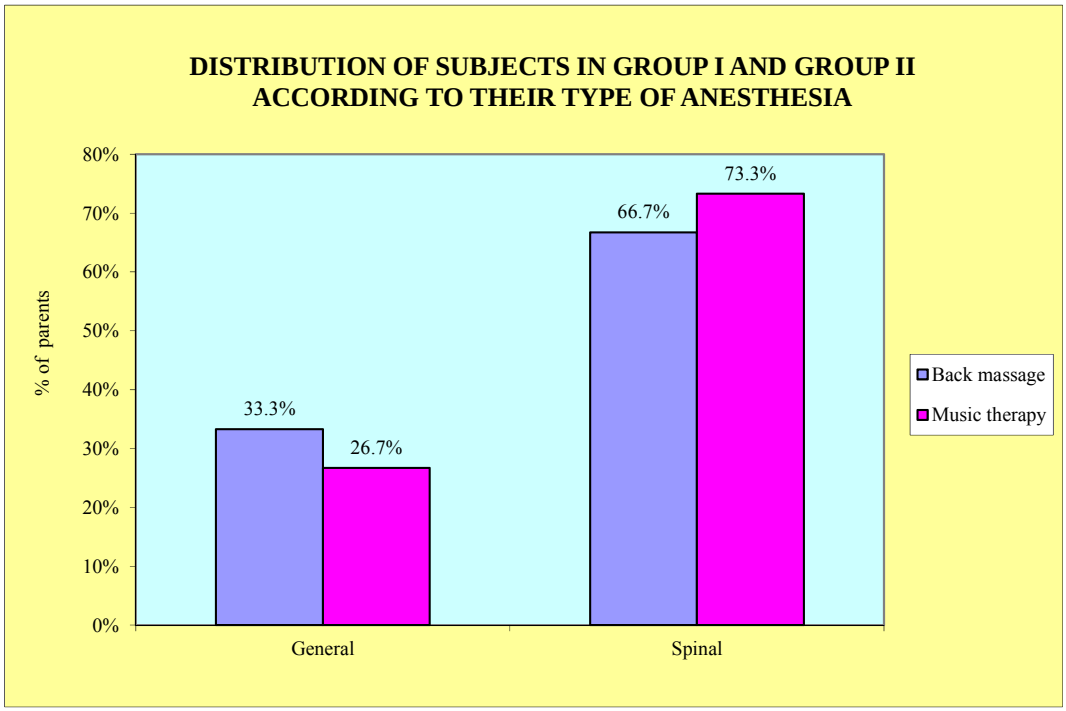

Fig 10: Percentage distribution of Type of anesthesia of the subjects in Back massage (Group I) and Music Therapy (Group II)

The above figure shows that most of the subjects 10 (33.3%) in Group I and 8 (26.7%) in Group II were General Anesthesia.

The findings of the study demonstrated that, Most of the patients 20 (66.7%) in group I and, 22 (73.3%) in Group II were Spinal Anesthesia and other variables are within normal limits.

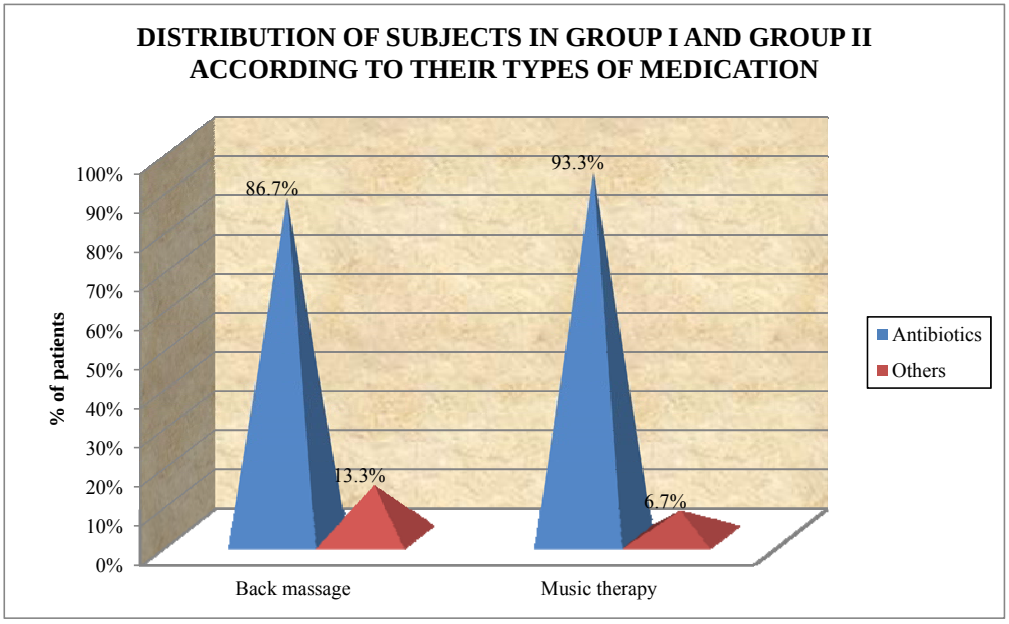

Fig 11: Percentage distribution of Types of Medication of the subjects in Back massage (Group I)and Music Therapy (Group II)

The above figure shows that majority of the subjects 26 (86.7%) in Group I, and 28 (93.3%) in Group II were had antibiotics and 4(13.3%) in Group I and 2(6.7%) in Group II were other medications.

Section III

Quality of Sleep of Patients

Quality of Sleep of Patient before and after Back Massage (Group I)

Table 4

Quality of Sleep Scale Score Back Massage (Group I)

	No. of patients	Min- max Sleep score	Mean ± SD	% of quality of sleep
Day3	30	0 -15	6.13 ± 0.90	40.8%
Day4	30	0 -15	10.60 ± 2.32	70.7%
Day5	30	0 -15	12.47 ± 0.82	83.1%

The data presented in table 4 shows the Quality of sleep of patients having inadequate sleep in Group I before and after back massage as measured by Subjective Assessment Quality of Sleep Scale.

The findings of the study demonstrated that ,On an average, 6.13 quality of sleep score out of 15 in Day3, On an average, 10.6 quality of sleep score out of 15 in Day 4 ,On an average, 12.47 quality of sleep score out of 15 in Day 5.

Table 5

Level of Quality of Sleep Score (Back Massage)

Level of quality of sleep	Pretest(Day1)		Posttest(Day2)		Posttest(Day3)	
	n	%	n	%	n	%
Highly inadequate sleep	0	0.0%	0	0.0%	0	0.0%
Inadequate sleep	30	100.0%	0	0.0%	0	0.0%
Fairly adequate sleep	0	0.0%	14	46.7%	5	16.7%
Adequate sleep	0	0.0%	16	53.3%	25	83.3%
Total	30	100.0%	30	100.0%	30	100.0%

The data presented in Table no 5 shows the Quality of sleep of patients having inadequate sleep in Group I before and after back massage as measured by Subjective Assessment Quality of Sleep Scale.

The findings of the study demonstrates that before back massage, none of the patients are having adequate sleep, in day 2, 53.3% of them are having adequate sleep, 46.7% of them are having fairly adequate sleep and day 3, 83.3% of them having adequate sleep , 16.7% of them having fairly adequate sleep.

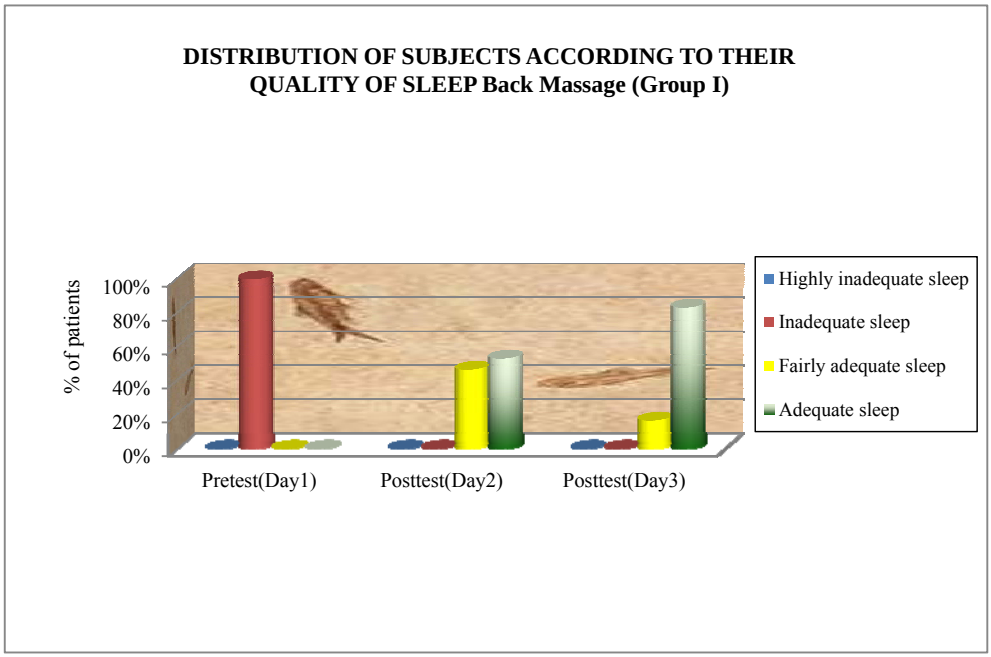

Fig 12: Percentage Distribution of Quality of Sleep Back Massage (Group I)

The above figure shows that before back massage, none of the patients are having adequate sleep, in day 2, 14 (46.7%) of them are having fairly adequate sleep and in day 3, 5(16.7%) of them having fairly adequate sleep, and in day 2, 16 (53.3%) of them are having adequate sleep and in day 3, 25 (83.3%) of them having adequate sleep.

Quality of sleep of patient before and after Music Therapy (Group II)

Table 6

Quality of Sleep Scale Score Music therapy (Group II)

	No. of patients	Min- max pain score	Mean±SD	% of quality of sleep
Pretest(Day1)	30	0 -15	6.07 ± 0.91	40.5%
Posttest(Day2)	30	0 -15	9.53 ± 1.87	63.5%
Posttest(Day3)	30	0 -15	11.00 ± 1.33	73.3%

The data presented in Table no 6 shows the Quality of sleep of patients having inadequate sleep in Group II before and after music therapy as measured by Subjective Assessment Quality of Sleep Scale.

The findings of the study demonstrated that, on an average, 6.07 quality of sleep score out of 15 in Day1, On an average, 9.53 quality of sleep score out of 15 in Day2, On an average, 11.00 quality of sleep score out of 15 in Day3.

Table 7

Level of Quality of Sleep Score (Music Therapy)

Level of Quality of Sleep	Pretest(Day1)		Posttest(Day2)		Posttest(Day3)	
	n	%	n	%	n	%
Highly inadequate sleep	0	0.0%	0	0.0%	0	0.0%
Inadequate sleep	30	100.0%	0	0.0%	0	0.0%
Fairly adequate sleep	0	0.0%	22	73.3%	13	43.3%
Adequate sleep	0	0.0%	8	26.7%	17	56.7%
Total	30	100.0%	30	100.0%	30	100.0%

The data presented in Table no 7 shows the Quality of sleep of patients having inadequate sleep in Group II before and after music therapy as measured by Subjective Assessment Quality of Sleep Scale.

The findings of the study demonstrated that, in music therapy in pretest, none of the patients are having adequate sleep, in day 2, 22 (73.3%) of them are having fairly adequate sleep and day3, 13 (43.3%) of them having fairly adequate sleep, and in day 2, 8 (26.7%) of them are having adequate sleep and day 3, 17 (56.7%) of them having adequate sleep in Music Therapy (Group II).

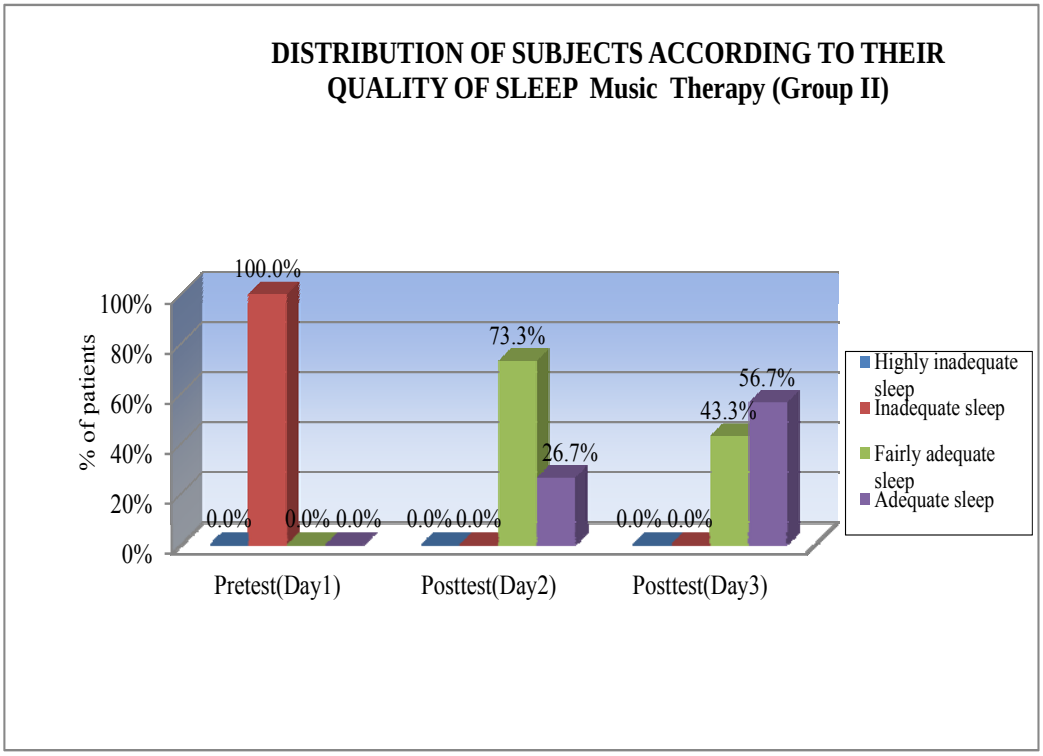

Fig 13: Percentage Distribution of Quality of Sleep Music Therapy (Group II)

The above figure shows that, in music therapy in pretest, none of the patients are having adequate sleep, in day 2, 22 (73.3%) of them are having fairly adequate sleep and day3, 13 (43.3%) of them having fairly adequate sleep, and in day 2, 8(26.7%) of them are having adequate sleep and day 3, 17 (56.7%) of them having adequate sleep in Music Therapy (Group II).

Comparison of Quality of sleep between Group I and Group II

Table 8

Comparison of Quality of Sleep Scale Score

	No.of patients	Back Massage	Music Therapy	Student independent t-test
		Mean±SD	Mean±SD	
Pretest(Day1)	30	6.13 ± 0.90	6.07 ± 0.91	t=0.28 P=0.77 DF=58 not significant
Posttest(Day2)	30	10.60 ± 2.32	9.53 ± 1.87	t=1.96P=0.05*DF=58 significant
Posttest(Day3)	30	12.47 ± 0.82	11.00 ± 1.33	t=5.11P=0.001*** DF= 58 significant

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The data presented in table 8 shows that in pretest, back massage patients are having 6.13 sleep score and music therapy patients are having 6.07sleep score. The difference is 0.06 score. It is small difference. This difference is statistically not significant. Statistical significance was calculated by using student's independent 't'test.

The findings of the study demonstrated that, In posttest (Day1), back massage patients are having 10.60 sleep score and Music Therapy patients are having 9.53 sleep score. The difference is 1.07 score. It is big difference. This difference is statistically significant. Statistical significance was calculated by using student's independent 't'test.

In posttest (Day2), back massage patients are having 12.47 sleep score and music therapy patients are having 11.00 sleep score. The difference is 1.47 score. It is big difference. This difference is statistically significant. Statistical significance was calculated by using student's independent 't'test.

Section IV

Table 9

Pretest and Posttest Comparison of Quality of Sleep Score

	No.of patients	Pretest(Day1) Mean±SD	Posttest(Day3) Mean±SD	Student paired t-test
Back massage	30	6.13 ± 0.90	12.47± 0.82	**t=30.85 P=0.001*** DF=58 significant**
Music therapy	30	6.07 ± 0.91	11.00 ± 1.33	**t=16.70P=0.001***DF=58 significant**

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The data presented in table 9 depicts that in back massage, patients are improved their sleep score from 6.13 to 12.47 after the administration of back massage .Due to back massage they are able to improved 6.33 score from base line score . This improvement is statistically significant. Statistical significance was calculated by using student's paired 't'test.

The findings of the study demonstrated that, in music therapy, patients are improved their sleep score from 6.07 to 11.00 after the administration of back massage .Due to back massage they are able to improved 4.93 score from base line score. This improvement is statistically significant. Statistical significance was calculated by using student's paired 't'test.

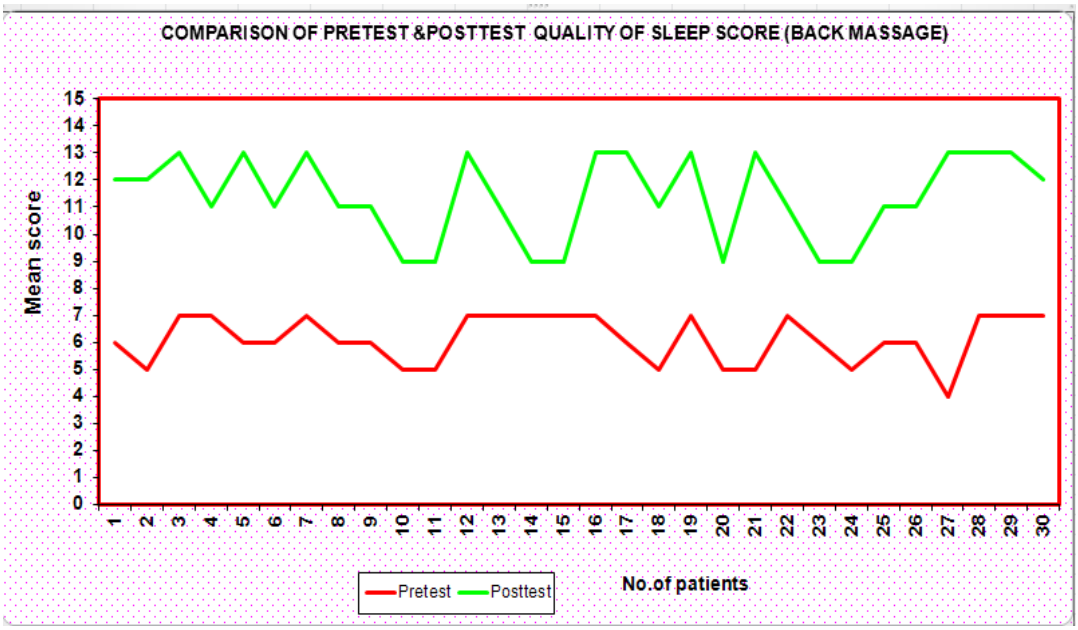

Fig 14: Comparison of Pretest and Post test Quality of Sleep Score Back Massage (Group I)

The above figure shows that in back massage, patients are improved their sleep score from 6.13 to 12.47 after the administration of back massage. Due to back massage they are able to improved 6.33 score from base line score. This improvement is statistically significant. Statistical significance was calculated by using student's paired 't'test.

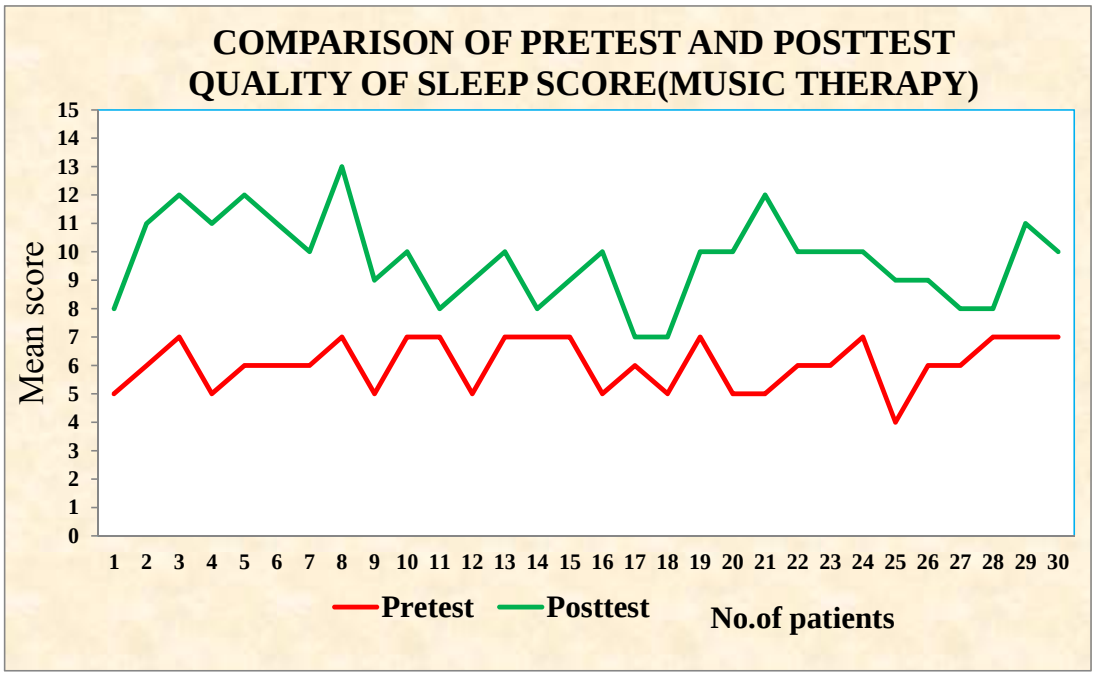

Fig 15: Comparison of Pretest and Post test Quality of Sleep Score Music Therapy (Group II)

The above figure shows that in music therapy, patients are improved their sleep score from 6.07 to 11.00 after the administration of back massage .Due to back massage they are able to improved 4.93 score from base line score . This improvement is statistically significant. Statistical significance was calculated by using student's paired 't'test.

Table 10

Effectiveness of Back Massage and Music Therapy

		Max score	Mean score	Mean Difference in sleep core with 95% Confidence interval	Percentage Difference in sleep score with 95% Confidence interval
Back massage	Pretest	15	6.13	6.33(5.91 – 6.75)	42.20%(39.40% – 45.00%)
	Posttest	15	12.47		
Music therapy	Pretest	15	6.07	4.93(4.33 – 5.54)	32.87%(28.87%– 36.93%)
	Posttest	15	11.00		

The data presented in Table 10 depicts on an average, in back massage; patients are improved 42.2% of sleep score whereas in music therapy patients are improved 32.87 sleep score.

The findings of the study demonstrated that, Differences between pretest and posttest score was calculated using and mean difference with 95% CI and proportion with 95% CI

Comparison of Sleep Efficiency Ratio Score of Subjects in pre test and post test of Group I and Group II

Table 11
Comparison of Level of Quality of Sleep Score

	Level of quality of sleep	Back Massage		Music Therapy		Pearson chi square test/Yates corrected chi square test
		n	%	n	%	
Day1	Highly inadequate sleep	0	0.0%	0	0.0%	$\chi 2$=0.00 P=1.00 not significant
	Inadequate sleep	30	100.0%	30	100.0%	
	Fairly adequate sleep	0	0.0%	0	0.0%	
	Adequate sleep	0	0.0%	0	0.0%	
Day2	Highly inadequate sleep	0	0.0%	0	0.0%	$\chi 2$=4.44 P=0.03* significant
	Inadequate sleep	0	0.0%	0	0.0%	
	Fairly adequate sleep	14	46.7%	22	73.3%	
	Adequate sleep	16	53.3%	8	26.7%	
Day3	Highly inadequate sleep	0	0.0%	0	0.0%	$\chi 2$=5.07 P=0.02* significant
	Inadequate sleep	0	0.0%	0	0.0%	
	Fairly adequate sleep	5	16.7%	13	43.3%	
	Adequate sleep	25	83.3%	17	56.7%	

The data presented in Table no 11 shows that Comparison level of Quality of Sleep score in Group I and Group II. The findings of the study demonstrated that, before back massage, none of the patients are having adequate sleep, in day1, 16(53.3%) of them are having adequate sleep and day 3, 25(83.3%) of them having adequate sleep. Before music therapy, none of the patients are having adequate sleep, in day2, 22(73.3%) of them having fairly adequate sleep, 8(26.7%) of them are having adequate sleep. In day 3, 5(16.7%) of the patients are having fairly adequate sleep, 25 (83.3%) of them are having adequate sleep after Back massage (Group I). In Day 3 13 (43.3%) of them having fairly adequate sleep, 17 (56.7%) of them having adequate sleep after Music Therapy (Group II)

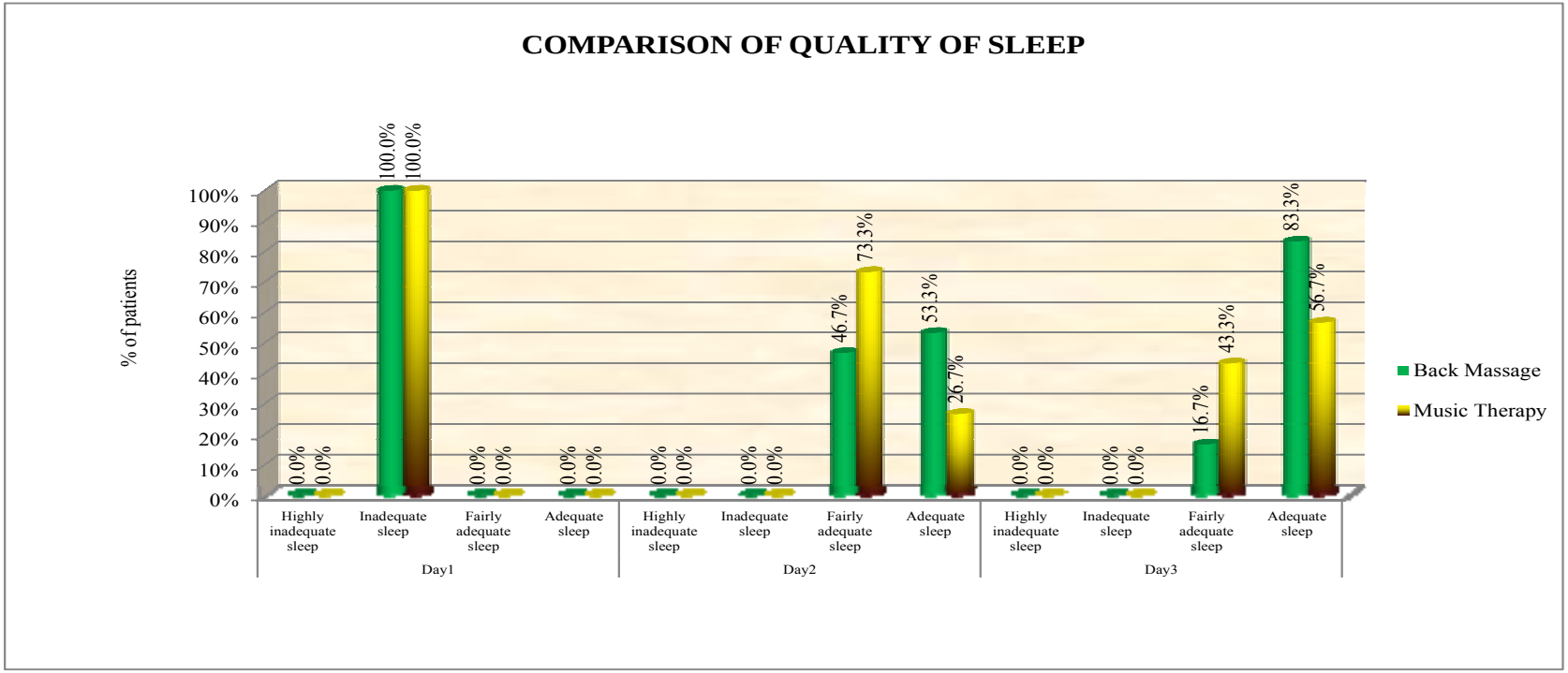

Fig 16: Comparison of Quality of Sleep in Group I and Group II

The above figure shows that before back massage, none of the patients are having adequate sleep, in day 2, 16 (53.3%) of them are having adequate sleep and Day 3, 25 (83.3%) of them having adequate sleep after Back Massage (Group I). Before music therapy, none of the patients are having adequate sleep, in day2, 22(73.3%) of them are having fairly adequate sleep and 8 (26.7%) of them having adequate sleep. In Day 3, 5(16.7%) of them having fairly adequate sleep. 25 (83.3%) of them having adequate sleep after Back Massage (Group I).In Day 3, 13(43.3%) of the patients are having fairly adequate sleep, 17 (56.7%) of the patients are having adequate sleep after Music Therapy (Group II).

Table 12

Frequency and Percentage Distribution of Subjects Reason for Disturbed Sleep (Group I and Group II)

N 30 +30=60

	Group I				Group II			
Courses of Disturbed sleep	**Pretest Day 1**		**Post test Day3**		**Pretest Day 1**		**Post test Day 3**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**
a) Bad odour								
b) Noise							3	10%
c) Light	4	13%						
d)Uncomfortable bed	4	13%						
Physiological								
a) Increased urination					6	20%		
b) Body pain	12	40%						
c) Headache	6	20%			6	20%		
d) Any other					12	40%		
Psychological								
a)Anxiety	2	7 %						
b)Worry	2	7%					3	10%
c)Sadness								
d)Any other								

The data presented in Table 14 depicted 4 (13%) having disturbance in light, 4 (13%) having disturbance in uncomfortable bed, 12 (40%) having body pain, 6 (20%) having Headache, 2 (7%) having anxiety, 2 (7%) having worry, in pretest in the group I Back Massage. In post test no subjects having causes for disturbed sleep. In group II Music therapy pre test 6 (20%) having increased urination, 6 (20%) having Head ache, 12 (40%) having any other reasons. In Post test Music therapy (Group II) 3 (10%) having noise, 3 (10%) having worry.

Section V

Associate the sleep quality with selected demographic variable.

Table 13

Association between Post test Level of Quality of Sleep and Demographic Variables Back Massage (Group I)

		Level of quality of sleep				Total	Pearson chi square test/ Yates corrected chi square test
		Fairly adequate sleep		Adequate sleep			
		n	%	n	%		
Age	21 -40 yrs	0	0.0%	16	100.0%	16	**$\chi 2=9.52 P=0.01^{**}$ DF=1 significant**
	>40 yrs	5	35.7%	9	64.3%	14	
Sex	Male	5	35.7%	9	64.3%	14	**$\chi 2=7.58 P=0.01^{**}$ DF=1 significant**
	Female	0	0.0%	16	100.0%	16	
Religion	Hindu	4	16.0%	21	84.0%	25	$\chi 2=0.05 P=0.82$ DF=1 not significant
	Muslim/ Christian	1	20.0%	4	80.0%	5	
Marital status	Single	2	28.6%	5	71.4%	7	$\chi 2=0.93 P=0.33$ DF=1 not significant
	Married	3	13.0%	20	87.0%	23	
Date of admission	3rd day	1	12.5%	7	87.5%	8	$\chi 2=0.13 P=0.71$ DF=1 not significant
	>3rd day	4	18.2%	18	81.8%	22	
Present illness	Appendectomy	5	27.8%	13	72.2%	18	**$\chi 2=4.04 P=0.05^{*}$ DF=1 significant**
	Others	0	0.0%	12	100.0%	12	
Type of Anesthesia	General	3	30.0%	7	70.0%	10	$\chi 2=1.92 P=0.16$ DF=1 not significant
	Spinal	2	10.0%	18	90.0%	20	
Types of medication	Antibiotics	5	19.2%	21	80.8%	26	$\chi 2=0.92 P=0.33$ DF=1 not significant
	Others	0	0.0%	4	100.0%	4	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The data presented in Table no 13 shows the association between demographic variables and their level of quality of sleep in back massage group. The findings of the study demonstrated that, Younger, females and other type of illness patients having more adequate sleep than others .Statistical significance was analyzed using Pearson chi square test/ Yates corrected chi square test.

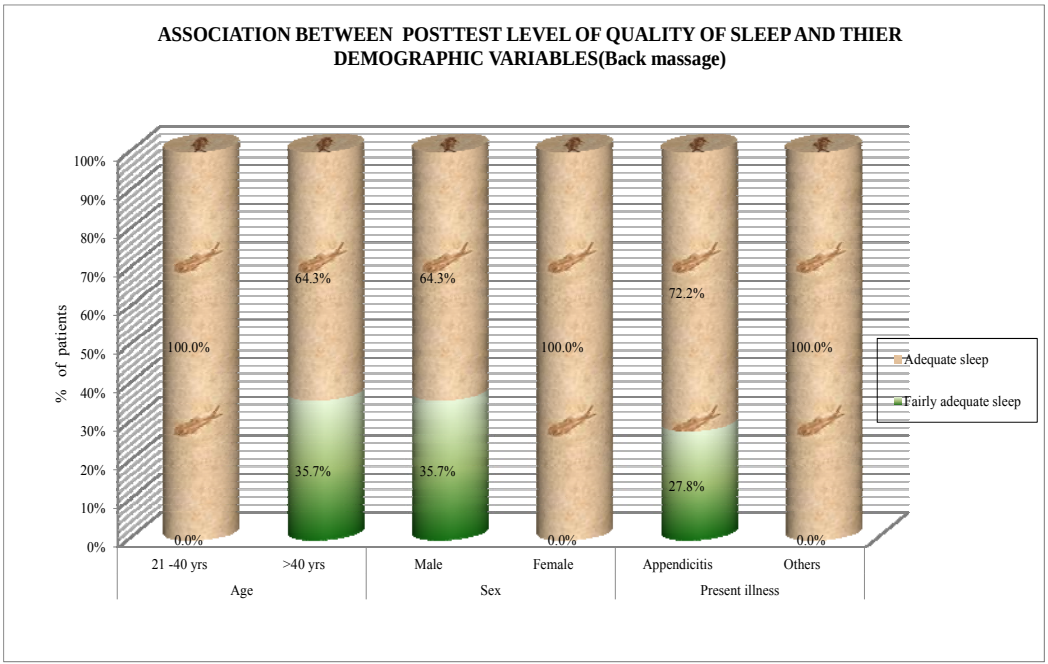

Fig 17 : Association between the post level of Quality of sleep and their demographic variable in Back Massage (Group I)

The above figure shows the association between demographic variables and their level of quality of sleep in back massage group. The findings of the study demonstrated that , Younger, females and other type of illness patients having more adequate sleep than others .Statistical significance was analyzed using Pearson chi square test/ Yates corrected chi square test

Table 14

Association between Post Test Level of Quality of Sleep and Demographic Variables Music Therapy(Group II)

		Level of quality of sleep				Total	Pearson chi square test/ Yates corrected chi square test
		Fairly adequate sleep		Adequate sleep			
		n	%	n	%		
Age	21 -40 yrs	12	60.0%	8	40.0%	20	**$\chi 2$=6.78P=0.01****
	>40 yrs	1	10.0%	9	90.0%	10	**DF=1 significant**
Sex	Male	8	66.7%	4	33.3%	12	**$\chi 2$=4.43P=0.03***
	Female	5	27.8%	13	72.2%	18	**DF=1 significant**
Religion	Hindu	13	52.0%	12	48.0%	25	$\chi 2$=0.07P=0.79
	Muslim /Christian	0	0.0%	5	100.0%	5	DF=1 not significant
Marital status	Married	4	40.0%	6	60.0%	10	$\chi 2$=2.33P=0.13
	Single	9	45.0%	11	55.0%	20	DF=1 not significant
Date of admission	3rd day	2	22.2%	7	77.8%	9	$\chi 2$=0.13P=0.71
	>3rd day	11	52.4%	10	47.6%	21	DF=1 not significant
Present illness	Appendectomy	12	60.0%	8	40.0%	20	**$\chi 2$=4.04P=0.05***
	Others	1	10.0%	9	90.0%	10	**DF=1 significant**
Type of Anesthesia	General	5	62.5%	3	37.5%	8	$\chi 2$=1.63P=0.20
	Spinal	8	36.4%	14	63.6%	22	DF=1 not significant
Types of medication	Antibiotics	11	39.3%	17	60.7%	28	$\chi 2$=2.80P=0.09
	Others	2	100.0%	0	0.0%	2	DF=1 not significant

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The data presented in Table no 14 shows the association between demographic variables and their level of quality of sleep in music therapy group. The findings of the study demonstrated that, Younger, males and other type of illness patients having more adequate sleep than others .Statistical significance was analyzed using Pearson chi square test/ Yates corrected chi square test.

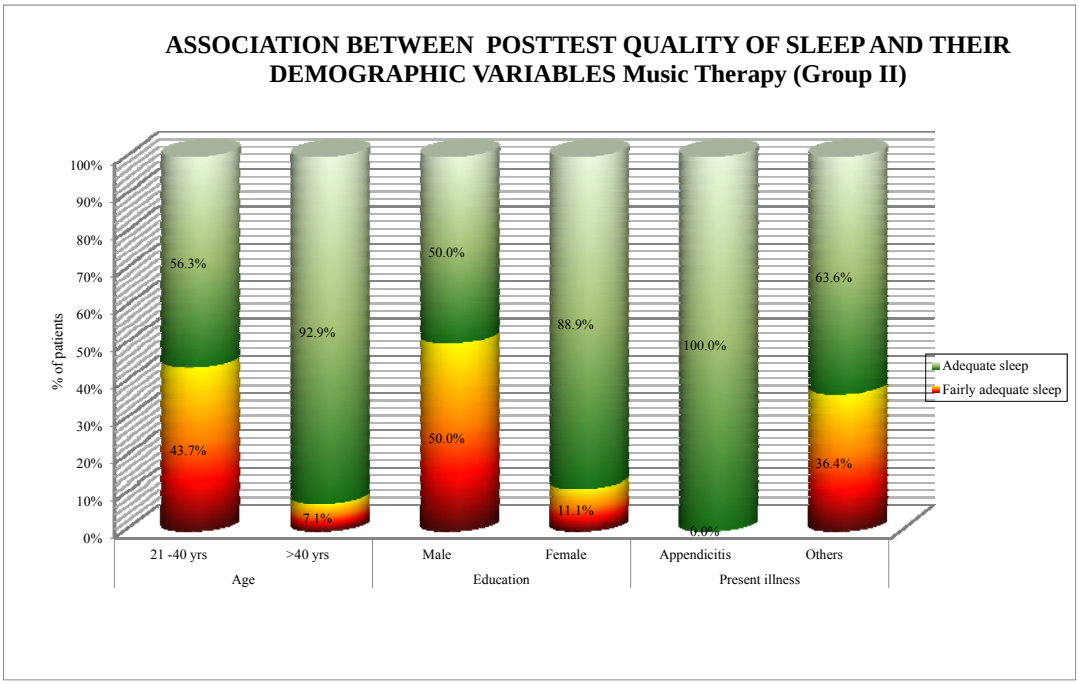

Fig 18 : Association between the post level of Quality of sleep and their demographic variable in Music Therapy (Group II)

The above figure shows the association between demographic variables and their level of quality of sleep in music therapy group. Younger, males and other type of illness patients having more adequate sleep than others .Statistical significance was analyzed using Pearson chi square test/ Yates corrected chi square test.

Table 15

Opinion Regarding Effect of Back Massage (Group I)

Sl. No	Item	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
1.	It was relaxing		30(100%)			
2.	It helped to sleep better		27(90%)	3(10.0%)		
3.	It relieved pain		20(66.7%)	10(33.3%)		
4.	It relieved tiredness		30(100%)			
5.	It had a soothing effect		30(100%)			
6.	It relieved anxiety		25(83.3%)	5(16.7%)		
7.	It made you feel rested		30(100%)			

The data presented in table 15 depicted that all the subjects that is 90% of Group I agreed that back massage causes relaxation helped to sleep better relieved tiredness, it had a soothing effect relief anxiety and made feel rested.

Table 16

Opinion Regarding Effect of Music Therapy (Group II)

Sl. No	Item	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
1.	It was relaxing		24 (80%)		6 (20%)	
2.	It helped to sleep better		24 (80%)		6 (20%)	
3.	It relieved pain			24 (80%)	6 (20%)	
4.	It relieved tired ness		24 (80%)		6 (20%)	
5.	It had a soothing effect		24 (80%)		6 (20%)	
6.	It relieved anxiety		24 (80%)		6 (20%)	
7.	It made you feel rested		24 (80%)		6 (20%)	

The data presented in table 16 depicted that the entire subjects that is 80% of Group II agreed that music therapy causes relaxation helped to sleep better relieved tiredness, it had a soothing effect relief anxiety and made feel rested.

SUMMARY

This chapter deals with analysis and interpretation of the data collected from 60 subjects who were having inadequate sleep admitted in post operative ward at Government Rajaji Hospital Madurai 20. Descriptive and inferential statistics were used for analysis. Paired t test was computed in order to test the significance of difference between the mean quality of sleep score of pretest and post test of 2 groups. The Mean post test quality of sleep score (x2=12.47), was higher than the mean pretest. Quality of sleep score (x1=6.13) of Group I subjects. The calculated‘t’ value (‘t’ (14) =30.85) p<0.001) showed that back massage was effective in promoting the sleep of patients.

The mean post test quality of sleep score (x2=11.00) was higher than the Mean pretest quality of sleep score (SAQS) x1= 1.06) of Group II subjects. In order to compare the effectiveness of 2 interventions independent‘t’ test was computed. The mean post test quality of sleep score (x2=11.00) of group I subjects was higher than the Mean post test quality of sleep score (=x2 = 6.07) of Group II subjects. The ‘t’ value computed (‘t’ (28= 16.70, p<0.08) showed that there was significant difference suggesting that back massage was effective than music therapy.

In order to find out the significance of difference between the 2 interventions independent‘t’ was computed. The‘t’ value (¯t (28) = 5.07. p<0.02).Showed that Back massage was effective than Music therapy for promoting sleep patients having inadequate sleep.

CHAPTER V

DISCUSSION

This chapter presents the major findings of the study and reviews them in relation to the findings from other studies.

Post-operative sleep disturbance, with suppression of rapid eye movement sleep and slow wave sleep followed by a subsequent rebound, seems to be related to the magnitude of trauma and thereby to the surgical stress response. In this context, cortisol, autonomic stimulation, and certain cytokines may lead to abnormal sleep. Furthermore, the environment, pain and the administration of analgesics seem to be important factors in the precipitation of sleep abnormalities. Post-operative sleep disturbance may contribute to the development of episodic hypoxemia, haemodynamic instability and altered mental status, all of which have an influence on post-operative morbidity and mortality. Prevention or reduction of the post-operative sleep disturbance may be achieved by minimizing surgical trauma, changing the conventional nursing procedures, avoiding opioids and treating pain with non-opioid analgesics, although none of these methods has been thoroughly studied. Post-operative sleep disturbance represents an important research field, since it may have a significant adverse impact on post-operative outcome.

S.Freedman Neil**,** (1999) assess the Patient Perception of Sleep Quality and Etiology of Sleep Disruption in the Intensive Care Unit, among 203 patients (121 males and 82 females) from different ICUs (cardiac [CCU], cardiac step-down [CICU], medical [MICU], and surgical [SICU] by questionnaire on the day of their discharge from the unit, to determine the perceived effect of environmental stimuli on sleep disturbances in the ICU. Perceived ICU sleep quality was significantly poorer than baseline sleep at home ($p = 0.0001$). Perceived sleep quality and daytime sleepiness did not change over the course of the patients' stays in the ICU, nor were there any significant differences ($p > 0.05$) in these parameters among respective units. Disruption from human interventions and diagnostic testing were perceived to be as disruptive to sleep as was environmental noise. In general, patients in the MICU appeared to be more susceptible to sleep disruptions from environmental factors than

patients in the other ICUs. This study reveals that: (1) poor sleep quality and daytime sleepiness are problems common to all types of ICUs, and affect a broad spectrum of patients; and (2*)* the environmental etiologies of sleep disruption in ICU's.

Importance of sleep for post operative subjects:

The aim of the study were to evaluate the effectiveness of Therapeutic back massage and music therapy on Quality of sleep among hospitalized patients with inadequate sleep at Government Rajaji Hospital, Madurai 20.

DEMOGRAPIC VARIABLES

The finding of study demonstrated that most of the subjects 24(80%) in Group I and 27 (90%) in Group II were below 50 years of age in both of the groups. Majority of the subjects 16 (53.3 %) in group I. And most of the subjects 18 (60%) in Group II were females. Most of the subjects 25 (83.3%) were belongs to Hindu religion in Both Group I and Group II. Most of the subjects 23 (76.7%) in Group I, and 20 (66.7%) Group II were married. Most of the subjects in 3rd Post operative day, 8 (26.7%). and 4th day, 12 (40%) and 5th day, 10 (33%) in Group I. and most of the subjects 9 (30%) in 3rd Post operative day. 4th day 12 (40%) and 5th day 9 (30%) in Group II were selected for date of admission. 18(60 %) of the subjects in group I and 20 (66.7%) in Group II were had appendectomy, 5(16.7 %) of the subject in Group I and 4(13.3%) of the subjects in Group II were had mastectomy, 5 (16.7%) of the subjects in Group I and 5(13.3 %) of the subjects in Group II were had herniorraphy 2(6.7%) in Group I and Group II were had cholecystectomy. This study was supported by Orhan Dogan, (2005) He conducted a comparative study at the Cumhuriyet University Hospital in Turkey to evaluate and compare sleep quality and matched healthy controls among 150 (One hundred and fifty) hospitalized patients using socio demographic information form and the Pittsburgh sleep quality index. They compared sociodemographic and illness variables with sleep characteristics by this study reveals that patients in psychiatric ward experienced worse sleep quality than the other patients, worse in female patients than male patients, and worse sleep characteristics in patients than controls.

DISSCUSSION OF THE STUDY BASED ON THE OBJECTIVES.

The first objective was to assess sleep Quality among Post operative patients

This semi structure questionnaire was used to assess the sleep quality of post operative patients. The findings imply that significance difference in the percentage, mean score, between the pretest for Group I and Group II. This study also reveals that 6.13 quality of sleep score in Group I (40.8%) and 6.07 quality of sleep score in Group II (40.5%) from table I. findings.

This study was supported by Mrs. Regi Varghese, Fr. Muller College of Nursing, Mangalore. The findings shows that 14 (93%) subjects are fairly inadequate sleep and 1 (7%) subjects are highly inadequate sleep in Group I. And 12 (80%) of subjects are fairly inadequate sleep , 3 (20%) subjects are highly inadequate sleep in Group II. in the pretest assessment.

The Second objective was to assess the effectiveness of Back Massage on Quality of sleep.

The effectiveness of back massage and the quality of sleep was summarized in Table 4 and Table 5. The findings shows that before back massage, none of the patients are having adequate sleep, and in day two, 53.3% of them are having adequate sleep and day Three , 83.3% of them having adequate sleep.

This study was supported by the study done by sangeeta macCune (2010) St Stephens College of Nursing, New Delhi To assess the effectiveness of back massage on sleep among post operative CABG and valve replacement patients. The pretest score is 93.3% subject respond to inability to sleep for more than 5 hours during last night. After the intervention of back massage this inability decreased to 11 (36.7%) subjects and 21 (63.33%) subjects slept for more than 5 hours at night.

The Third objective of the study was to assess the effectiveness of Music therapy on Quality of sleep

The effectiveness of back massage and the quality of sleep was summarized in Table 6 and 7. The Table VI findings show that (40.5%) in pre test (73.3%) in post test. This study supported by Zimmerman.I (1996) UNMC College of Nursing, USA. The effects of music interventions of postoperative pain and sleep in coronary artery bypass graft (CABG) patients. This study shows that p<.05, better sleep scores that the control group on the third morning.

The fourth objective of the study was to compare the quality of sleep between the patients in Group I and Group II after Back Massage and Music Therapy.

The effectiveness of back massage and the quality of sleep was summarized in Table 8,9,10 and 11. The table findings shows that in back massage ,patients are improved their sleep score from 6.13 to 12.47 after the administration of back massage ,they are able to improved 6.33 score from base line score . This improvement is statistically significant. Statistical significance was calculated by using student's paired 't'test.

In music therapy ,patients are improved their sleep score from 6.07 to 11.00 after the administration of back massage .Due to back massage they are able to improved 4.93 score from base line score . This improvement is statistically significant. Statistical significance was calculated by using student's paired 't'test.

The fifth objective of the study was to associate the sleep quality with selected Demographic Variable

The effectiveness of back massage and the quality of sleep was summarized in Table 12 and Table 13.Table 12 shows the association between demographic variables and their level of quality of sleep in back massage group. Younger, females and Appendectomy patients having more adequate sleep than Mastectomy, herniorraphy, cholecystectomy .Statistical significance was analyzed using Pearson chi square test/ Yates corrected chi square test Table no 13 shows the association between demographic variables and their level of quality of sleep in music therapy group. Younger, males and Appendectomy patients having more adequate sleep than Mastectomy, herniorraphy, cholecystectomy.Statistical significance was analyzed using Pearson chi square test/ Yates corrected chi square test.

Reason for disturbed sleep

Data in Table 14 indicated 4(13%) having disturbance in light, 4 (13%) having disturbance in uncomfortable bed,12 (40%) having body pain , 6 (20%) having Headache, 2 (7%) having anxiety, 2 (7%) having worry, in pretest in the group I Back Massage. In post test no subjects having causes for disturbed sleep. In group II Music therapy pre test 6 (20%) having increased urination, 6 (20%) having Head ache, 12 (40%) having any other reasons.. In Post test Group II Music therapy 3 (10%) having noise, 3 (10%) having worry.

This study was supported by Lane.T (2008) Queens Medical Centre, Nottingham. Sleep disruption experienced by surgical patients in an acute hospital. This study reveals that environmental noise, pain and tension were most likely to disrupt the sleep of surgical patients.

Opinion regarding effect of Back Massage

Data in table 15 depicted that the entire subject that is 90% of Group I agreed that back massage causes relaxation helped to sleep better relieved tiredness, it had a soothing effect relief anxiety and made feel rested. This study was supported by Mary Walton (2009) was conducted a comparative study among 60 adult clients who were confined to bed in orthopedic wards of St John's Medical College and Hospital (SJMCH), Bangalore , using one group pre-test post-test design. This study reveals that effleurage back massage was effective on all the physiological components blood pressure, heart rate, respiratory rate, pain and anxiety levels

Opinion regarding effect of music therapy

Data in table 16 depicted that the entire subject that is 80% of Group II agreed that music therapy causes relaxation helped to sleep better relieved tiredness, it had a soothing effect relief anxiety and made feel rested.

This study was supported by Lin.P et al (2011). He conducted a quasi experimental study at a medical center at taiwan from April to July 2006. The study was to evaluate the effects of music therapy on anxiety, postoperative pain and physiological reactions to emotional and physical distress in patients undergoing spinal surgery. This study reveals that music therapy has some positive effects on levels of anxiety and pain in patients undergoing spinal surgery.

CHAPTER VI

SUMMARY, CONCLUTION, IMPLICATION AND RECOMMENDATION

This chapter deals with the summary of the study and conclusion drawn. It focuses on the implications and given recommendations for nursing practices, nursing research, nursing administration, nursing education.

6.1 SUMMARY OF THE STUDY

The focus of the study was to evaluate the effect of Therapeutic back massage and Music therapy on Quality of sleep among Hospitalized patient with inadequate sleep at Post operative ward Government Rajaji Hospital Madurai.

The design of the study was Quasi experimental is pretest and post test design. A total number of 60 subjects with inadequate sleep on post operative ward were selected for this study according to the inclusion criteria. This study was carried out with the following objectives.

- To assess sleep Quality among post operative patients.
- To assess the effectiveness of Back massage on Quality of Sleep.
- To assess the effectiveness of Music Therapy on Quality of Sleep.
- To compare the quality of sleep between the patients in Group I and Group II after Back Massage and Music Therapy.
- To associate the sleep quality with selected demographic variable.
- The following hypotheses were set for the study and all hypotheses were tested at 0.05% of significance level.
- **H1**: The mean post test sleep score of Group I will be higher than their mean pretest sleep score.
- **H2** :The mean post test sleep score of Group II will be significantly higher than their mean pretest sleep score
- **H3**: There will be a significant difference between mean posttest sleep score of Group I and Group II.

- There will be significant association between the level of satisfaction and selected demographic variables.
- There will be a significant difference between the level of Quality of sleep of Post operative patients among Group I and Group II patients after administering back massage and music therapy.

The purpose of undertaking the Study to Evaluate the effectiveness of Therapeutic Back Massage and Music therapy on Quality of sleep among Hospitalized patients with inadequate sleep at Post operative ward. And in depth review of literature was collected for the study. The conceptual frame work adopted for this study was Imogine M King's goal attainment theory model.

The design of the study was Quasi experimental is pretest and post test design was chosen for conducting the study.

The investigator after establishing the rapport with the post operative patients assess the effectiveness of quality of sleep after administering back massage and music therapy with the help of semi structured questionnaire. Inadequate sleep of patients were through purposive techniques. After testing the validity and reliability the same tool was used for the data collection.

The pilot study was conducted to find out the feasibility of conducting the study. Then the data obtained was assess the applicability of statistical methods. The areas and subjects of pilot study were excluded in the actual study.

6.2 FINDINGS OF THE STUDY

Demographic data of the sample

- Most of the subjects (80%) group I and (90%) in group II were in the age of 21 to 50 years.
- Most of the subjects (53.3%) in Group I and (60 %) were females.
- Most of the subjects (83.3%) were belongs to Hindu religion in both groups.
- Maximum number of subjects (76.7%) in Group I and (66.7 %) Group II were married.
- Most of the subjects (40%) in the 4^{th} post operative day.
- Majority of the subjects (66.7%) having appendectomy.

Assess the effectiveness of Back massage (Group I) on Quality of Sleep.

- In the pretest subject were minimum score (40.8%). After the back massage score is (83.1%), in the post test.
- In the pretest (100%) of the patients are having inadequate sleep. After administering back massage, (83.3%) of those having adequate sleep in the post test.

Assess the effectiveness of Music Therapy (Group II) on Quality of Sleep.

- In the pretest subject were minimum score (40.5%). After the Music therapy score is (73.3%), in the post test.
- In the pretest (100%) of the patients are having inadequate sleep. After administering music therapy, (56.7%) of those having adequate sleep in the post test.

Compare the quality of sleep between the patients in Group I and Group II after Back Massage and Music Therapy.

- In the pretest t=0.28 P=0.77 DF=58 not significant
- In the post test t=5.11P=0.001*** DF= 58 significant
- In back massage, patients are improved 42.2% of sleep score whereas in music therapy patients are improved 32.87sleep score.

Associate the sleep quality with selected demographic variable.

Pearson chi square test/Yates corrected chi square test value of $\chi 2$=9.52P=0.01** significant, $\chi 2$= 7.58P=0.01** significant in age group, and $\chi 2$=6.78P=0.01** significant in sex , $\chi 2$=4.04P=0.05* DF=1 significant in group I $\chi 2$=4.43P=0.03* significant $\chi 2$=4.04P=0.05*DF=1 significant respectively shows that in post test was significant association between the level of fulfilling needs on age and sex and present illness.

- Most of the subjects (80%) were in the age group of 21 to 50 years in Group I (Back Massage), and (90%) in Group II.
- Most of the subjects (53.3%) in Group I and (60 %) were females.
- Majority of the subjects (60%) in Group I and (66.7%) in Group II have appendectomy.

6.3 CONCLUSION

The study concluded that back massage is the effective non pharmacological intervention than music therapy to promote the quality of sleep. The music therapy also promotes sleep. The causes of disturbed sleep in hospitalized subjects are noise, head ache, anxiety .In Group I (90%) of the subject after back massage expressed that they slept well and agreed to the statement of opinion and only (10%) disagreed. In Group II (80%) of the subject expressed that they slept well after music therapy and only (20%) disagreed.

6.4 IMPLICATION OF THE STUDY

6.4.1 Nursing Implications

The critical care nurse place a vital role to assess the quality of sleep for providing non pharmacological intervention like massage therapy/ Music therapy is essential. The nurse in critical units knows that the non pharmacological interventions like massage and music therapy etc. are essential for promoting sleep for post operative patients as well as general ward patients.

Therefore the study has important implications in

- ❖ Nursing practice
- ❖ Nursing Education
- ❖ Nursing Administration
- ❖ Nursing Research

6.4.2 Implications for Nursing Practice

1. This kind of non interventional therapy has manifold effects on human life and health and lie within the preview of nursing constitution and polices.
2. This study findings have contributed to strengthen the aspiration of nursing profession to reach a greater height of independence in education and service, which at present stand at the cross road of health care system.

3. Nurses who are working in the wards of the hospital should assess the patient's sleep pattern by taking a sleep history, observing the patient and by questioning about the quality and quantity of sleep and factors that disturb sleep during night.
4. Sleep Scale Chart should be included in the health record of the patients. Sleep promoting measures like sleep hygiene techniques; massage and music therapy could be implemented on patients with insomnia instead of treating only on drug.
5. This type of studies would help to open the windows to the patients inner world of feelings, which would help Nursing profession to identify with its client thus serve him the best.
6. This therapies is economic in terms of its utilization of health care, man power, money involved, materials required, method of administration and time spent.

6.4.3 Implications for Nursing Education

1. Nursing Education in this century looks forward for most independent role on alternative system in health care system.
2. Nursing curriculum should include contents on different interventions like Back Massage Therapy to treat sleep disorders.
3. The complimentary and alternative measures provide other comfort measures that may lower the amount of pain medication needed.
4. These measures reduce the anxiety and allow the client to relax and rest.

6.4.4 Implications for Nursing Administration

1. As a Nursing Administrator in different wards of the hospital, she could take all the measures to provide conducive environment for good sleep.
2. She should include various techniques of massage therapy and sleep hygiene techniques in in-service education programs.
3. She could conduct and encourage various research program regarding newer techniques of massage and music therapy as interventions for inadequate sleep.

6.4.5 Implications for Nursing Research

1. There is a great need of Nursing Research in the areas of sleep disorders in hospitalized patients and non pharmacological nursing interventions like Back massage and music therapy because of the prevalence of sleep disturbance in hospitalized patients.
2. Increasing awareness of these problems may be beneficial particularly as increased sleep improves day time alertness and it is possible only through research in this field and it highlighted the effectiveness of back massage on sleep.
3. Other non pharmacological interventions for sleep disorders may be selected and further studied.

6.5 RECOMMENDATIONS FOR THE FUTURE RESEARCHER

Based upon the study findings, the following recommendations were made for the further study.

1. The study can be repeated on a large sample size, having a control group.
2. Investigate the effect of massage on sleep in acutely critically ill patients.
3. A comparative study can be conducted to find out the most effective massage technique using different mode of therapy to induce sleep.
4. A study to find out the perceived effectiveness of music therapy as an independent therapeutic nursing intervention among staff nurses can be conducted.
5. Development of standardized tool to measure sleep.

6.6 SUGGESTIONS

1. Nurses should realizes the importance of effectiveness of quality of sleep in practice in post operative ward and general ward.
2. The critical care nurse upgrade this knowledge repeating the non pharmacological interventions like back massage and music therapy to promote sleep.

6.7 LIMITATIONS

The limitations of the study were,

The setting of the study was chosen due to the researcher feasibility. Due to this logical limitation the findings can be generalized only to selected settings.

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APPENDIX-III

Ref.no.23339/E4/3/09 dt 09.05.11. Govt. Rajaji Hospital, Madurai – 20.

INSTITUTIONAL REVIEW BOARD / INDEPENDENT ETHICS COMMITTEE

GovtRajaji hospital and Madurai Medical Collage, Madurai 625020.

Proceedings and recommendations of the IRB / IEC meeting held on 31.03.20 11

The Institutional Review Board/ Independent Ethics Committee of the Govt. Rajaji Hospital and Madurai Medical College, Madurai 625020 met on the 31.03.2011 at 12 noon, when the following members were present.

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1. Dr.S.M.Sivakumar, M.S (Gen. Surgery)	M.S, Govt. Rajaji Hospital, Madurai.	Convener
2. Dr.N.Vijayasankaran, M.Ch (Uro.)	Sr. Consultant Urologist Madurai Kidney Centre, Sivagangai Road, Madurai	Chairman
3. Dr.T.Meena, MD or Dean I/c (MMC)	Professor of Physiology, Madurai Medical College	Member
4. Dr.MosesK.Daniel MD (Gen.Medicine)	Professor of Medicine Madurai Medical College	Member
5. Dr.M.Gobinath, MS (Gen. Surgery)	Professor of Surgery Madurai Medical College	Member
6. Dr.B.K.C.MohanPrasad, M.ch, (Surg. Oncology)	Professor of Surg.Oncology Madurai Medical College	Member -Secy.
7. Shri.M.Sridher, B.Sc.B.L.	Advocate, 623-B.ll.Floor, East II Cross, K.K.Nagar, Madurai.20.	Member
8. Shri.O.B.D.Bharat, B.sc.,	Businessman Plot No.588, K.K.Nagar.Madurai.20.	Member
9. Shri.S.Sivakumar, M. A (Social) M.Phil	Sociologist, Plot No.51 F.F, K.K Nagar, Madurai.	Member

The Committee considers the research study Proposal submitted by PG student Mrs. S. Muniammal II Year M.Sc., Nursing Student of College of Nursing, Madurai Medical College, Madurai as per agenda. After discussion, the following study proposal has approved.

Mrs. S. Muniammal	Second Batch M.Sc Nursing M.M.C Madurai.	Effectiveness of Back massage and Music therapy on Quality of sleep among Hospitalized patients with inadequate sleep at postoperative wards in Government Rajaji Hospital, Madurai

Medical Superintendent

From

The Principal,
College of Nursing,
Madurai Medical College,
Madurai.

To

The Professor & Head of the Department,
Department of Surgery,
Government Rajaji Hospital,
Madurai.

Respected Sir,

Sub: Requesting permission to allow Mrs. S. Muniammal, M.Sc (N) I year student of College of Nursing, Madurai Medical College, Madurai, to conduct a Dissertation study at Surgical Post operative wardregarding.

As per the Curriculum recommended by the Indian Nursing Council and The Tamilnadu Dr. M.G.R. Medical University, all the M.Sc. Nursing Students are required to conduct a dissertation study for the partial fulfillment of the course.

Mrs.S.Muniammal is a bonafide student of College of Nursing, Madurai Medical College, and doing M.Sc. Nursing I year (Medical Surgical Nursing). He has selected a study topic "A Comparative study on the effectiveness of Back massage and Music therapy on Quality of sleep among hospitalized patients with inadequate sleep at postoperative wards in Government Rajaji Hospital, Madurai" for his dissertation. He wants to conduct the study at Surgical Postoperative ward.

I kindly request you to consider his request and allow to conduct the study in your esteemed department

Thanking You,

Madurai – 20

Yours sincerely,

24.02.2011.

Professor and Head
Department of Surgery
MADURAI MEDICAL COLLEGE
Govt. Rajaji Hospital
Madurai-20.

Principal
COLLEGE OF NURSING
Madurai Medical College
Madurai-20.

From

S. Muniammal
M.Sc. (N) I year,
College of Nursing,
Madurai Medical College,
Madurai — 20.

To

PROFESSOR AND HEAD OF THE DEPARTMENT,
DEPARTMENT OF SURGERY,
GOVERNMENT RAJAJI HOSPITAL,
MADURAI.

Through: The proper channel

Respected sir,

Sub: Requesting permission to conduct pilot study on the topic A Comparative study on the effectiveness of Back massage and Music therapy on Quality of sleep among hospitalized patients with inadequate sleep at postoperative wards in Government Rajaji Hospital, Madurai

I am the First Year M.Sc. Nursing student of College of Nursing, Madurai Medical College, Madurai. In Partial fulfillment of Master Degree in Nursing, I have selected the above topic for the dissertation to submit to the Dr.M.G.R Medical University, Chennai. I request you to kindly give me permission to conduct pilot study in the selected wards of government Rajaji hospital. Kindly do the needful.

Thanking you,

Madurai-20. Yours Sincerely,

Professor and Head
Department of Surgery
MADURAI MEDICAL COLLEGE
Govt. Rajaji Hospital
Madurai-20

Principal
COLLEGE OF NURSING
Madurai Medical College
Madurai-20.

Section –I

Demographic Data

1. Age in Years
   a) 21- 29
   b) 30-40
   c) 41-50
   d) 51-60
   e) >60

2. Sex
   a) Male
   b) Female

3. Marital Status
   a) single
   b) Married
   c) Divorcee
   d) Separated

4. Date of Admission
   a) 3rd day
   b) 4th day
   c) 5th day

5. Present Illness
   a) Appendectomy
   b) Mastectomy
   c) Herniorraphy
   d) Cholecystectomy
   e) Others

Clinical Variables

1.Type of Anesthesia

a) General

b) Spinal

2.Types of Medication

a) Antibiotics

b) Others

3.Vital signs

a. Temperature

a)98.4° F- 99°F

b) 99°F -100° F

b. **Pulse**

a) 80 – 90/mt

b) 90 – 100 /mt

c. Respiration

a) 10 - 20 /mt

b) 20 -30/mt

c) > 30 /mt

d. Blood pressure

a) 120/80- 140/80 mm of Hg

b) > 140/80 mm of Hg

4. Pain

a) Mild

b) Moderate

c) Severe

5. Sa o2

a) < 90

b) >90-100

Section II

Subjective Assessment of Quality of Sleep Scale

1. How well did you sleep last Night?

   a) Poor (0) ( )
   b) Fairly well (1) ( )
   c) Well (2) ( )

2. How many hours did you sleep last Night?

   a) Less than 6 hours (0) ( )
   b) 6-7 hours (1) ( )
   c) > 7 hours (2) ( )

3.Did you sleep during day time?

   a) No (0) ( )
   b) Yes (1) ( )

4. If yes how many hours did you sleep?

   a) Less than 1 hour (0) ( )
   b) 1-2 hours (1) ( )
   c) 2-3 hours (2) ( )
   d) 3-4 hours (3) ( )

5. How many times did you wake up during last night?

   a) More than 3 times (0) ( )
   b) Twice (1) ( )
   c) Once (2) ( )
   d) Never (3) ( )

6. Do you have feeling that you slept less than normal

   a) Yes (0) ( )
   b) No (1) ( )

7. Did you wake up as usual this morning?

   a) No (0) ( )
   b) Yes (1) ( )

8. Did you feel refreshed when you got up this morning?

a) No (0) ( )

b) Yes (1) ( )

9. Did you have disturbed sleep during Night?

a) Yes (0) ( )

b) No (1) ( )

10. What may be causes for disturbed sleep?

a. Physiological

a) Increased urination
b) Body pain
c) Indigestion
d) Headache
e) Any other

b. Psychological

a) Anxiety
b) Worry
c) Night mares
d) Sadness
e) Any other

Classification of Sleep Score

I.	Adequate sleep	(80-100%)	(12-15)
II.	Fairly adequate sleep	(50-80%)	(8-11)
III.	Inadequate sleep	(30-50%)	(4-7)
IV.	Highly Inadequate sleep	(<30%)	(0-3)

SECTION III

OPINIONNAIRE REGARDING EFFECT OF BACK MASSAGE

Instructions: The investigator place a tick (✓) mark in the corresponding space according to the response of the subject

1. What is your opinion regarding back massage?

Sl. No	Statement	(4) Strongly Agree	(3) Agree	(2) Un Certain	(1) Disagree	(0) Strongly Disagree
1.	It was relaxing					
2.	It helped to sleep better					
3.	It relieved pain					
4.	It relieved tired ness					
5.	It had a soothing effect					
6.	It relieved anxiety					
7.	It made you feel rested					

SECTION III

OPINIONNAIRE REGARDING EFFECT OF MUSIC THERAPY

Instructions: The investigator place a tick (✓) mark in the corresponding space according to the response of the subject

1. What is your opinion regarding music therapy?

Sl. No	Statement	(4) Strongly Agree	(3) Agree	(2) Un Certain	(1) Disagree	(0) Strongly Disagree
1.	It was relaxing					
2.	It helped to sleep better					
3.	It relieved pain					
4.	It relieved tired ness					
5.	It had a soothing effect					
6.	It relieved anxiety					
7.	It made you feel rested					

Tá¾ - I

RuÅYWdáÈlé

1. YVç
   A) 21- 29 YìPm
   B) 30-40 YìPm
   C) 41-50 YìPm
   D) 51-60 YìPm
   E) >60 YìPm

2. TôÄ]m
   A) Bi
   B) ùTi

3. ¾ìUQj Rá¾
   A) RÉVôLYôrTYo
   B) ¾ìUQUô]Yo
   C) ÅRûY
   D) ÀÃkçYôrTYo

4. °¸fûNdá AòU¾dLlThP Sôs
   A) Øu\ômSôs
   B) SuLômSôs
   C) IkRômSôs

5. RtúTôûRV ÅVô¾
   A) áPpYôpî ¨dLm
   B) UôoéAñûY °¸fûN
   C) áPÄ\dLmúSôn
   D) ÀjRlûTLp¨dLm
   E) CRW ÅVô¾Ls

UìjçYáÈléLs

1. UVdL Uìk¾u YûLLs

A) ùTôç

B) êç¸pùNíjçYç

2. Uìk¾u YûL

A) úSôn G¾olé Uìkç

B) Ut\ûY

3. EPp ¿ûXáÈ«åLs

EPpùYlTm

A) $98.4^0F - 99^0F$

B) $99^0F - 100^0F$

Sô¼j ç¼lé

A) 80-90 / ¿ÁPm

B) 90-100 / ¿ÁPm

ãYôNj¾u ¿ûX

A) 10-20 / ¿ÁPm

B) 20-30 / ¿ÁPm

C) >30 / ¿ÁPm

WjRAïjRm

A) 120/80 mm of Hg

B) 140/80 mm of Hg

4. YÄÂuA[î

A) ÁLîmáû\YôL

B) ùTôñjçdùLôsðU[î

C) A¾LUôL

5. ÀWôQYôë(S_a 0_2)

A) < 90

B) >90-100

Tá¾ - II

ÕdLA[ÅuRWmTtÈV A[®å

ÕdLA[ÅuRWmTtÈV A[®å

1. úStñ GlT¼ Õe¸²oLs?

A) úUôNm (0)

B) TWYôÂpûX (1)

C) Suñ (2)

2. úStñCWîGjRû] U½ úSWm Õe¸²oLs?

A) 6 U½ úSWj¾tá áû\YôL (0)

B) 6-7 U½ úSWm (1)

C) 7 U½ úSWj¾tám úUp (2)

3. TLÄpÕeámYZdLmEiPô?

A) Bm (0)

B) CpûX (1)

4. BmGÉpGqY[î U½ úSWmÕeá®oL[ô?

A) Jì U½ úSWj¾tá áû\YôL (0)

B) 1-2 U½ úSWm (1)

C) 2-3 U½ úSWm (2)

D) 3-4 U½ úSWm (3)

5. úStû\V CWî ÕdLj¾u úTôçGjRû] RPûYGïk§oLs?

A) 3 RPûYdá A¾LUôL (0)

B) Cìêû\ (1)

C) Jìêû\ (2)

D) GZúYCpûX (3)

6. úStñCWîÕeáYRtá °WUlTh¥oL[ô?

A) Bm (0)

B) CpûX (1)

7. CuñLôûXYZdLmúTôpGïk§oL[ô?

A) Bm (0)

B) CpûX (1)

8. CuñLôûXGïmúTôçéjçQof°VôLEQok§oL[ô?

A) CpûX (0)

B) Bm (1)

9. CWî ÕdLj¾u úTôçRûPHtThPRô?

A) Bm (0)

B) CpûX (1)

10. BmGÉp ÕdLj¾p RûPHtTPLôWQmGu]?

EPpSXmNôokRûY

A) A¾LlT¼Vô] °ñ¨o

B) ùNÃUô]ÁuûU

C) RûXYÄ

D) Ut\ûY

U]ÅVpNôokRûY

A) U] Eû[fNp

B) LYûX

C) L]îLs

D) Ut\ûY

çpÄVUô] ÀÃîLÇu T¼Vô] ÕdLj¾u U¾lùTiLs.

¿mU¾Vô] E\dLm	(80-100%)	(12-15)
Tá¾Vô] ¿mU¾ E\dLm	(50-80%)	(8-11)
¿mU¾Vt\ E\dLm	(30-50%)	(4-7)
êïûUVô] ¿mU¾Vt\ E\dLm	(<100%)	(0-3)

பகுதி - III

பேக் மஜாஜ்ன் விளைவுகள் பற்றிய கருத்து கணிப்பு

குறிப்பு: ஆய்வாளர் (✓) குறியினை பரிசோதிப்பவரின் கருத்துக்கு ஏற்ப குறிக்கவேண்டும்.

1. பேக் மசாஜ்பற்றிய உங்கள் கருத்து என்ன?

வ. எண்	கருத்து	(4) வன்மையாகஆமோதிக்கிறேன்	(3) ஆமோதிக்கிறேன்	(2) நடைமுறைக்கு ஒவ்வாதது	(1) ஏற்றுக் கொள்ளவில்லை	(0) வன்மையாகஏற்க முடியாது
1	அது தளர்வாகஇருக்கச் செய்கிறது					
2	நன்றாக தூங்குவதற்கு உதவுகிறது					
3	அது வலியிலிருந்து விடுபடஉதவுகிறது					
4	அது அசதியிலிருந்து விடுபடஉதவுகிறது					
5	அது மென்மையான விளைவை ஏற்படுத்துகிறது					
6	அது எரிச்சலிருந்து விடுபடஉதவுகிறது					
7	அது உங்களை ஓய்வாகஉணரச் செய்கிறது.					

பகுதி - III

இசை மருத்துவத்தின் விளைவுகள் பற்றிய கருத்து கணிப்பு

குறிப்பு: ஆய்வாளர் (✓) குறியினை பரிசோதிப்பவரின் கருத்துக்கு ஏற்ப குறிக்கவேண்டும்.

1. இசை மருத்துவத்தினை பற்றிய உங்கள் கருத்து என்ன?

வ. எண்	கருத்து	(4) வன்மையாகஆமோதிக்கிறேன்	(3) ஆமோதிக்கிறேன்	(2) நடைமுறைக்கு ஒவ்வாதது	(1) ஏற்றுக் கொள்ளவில்லை	(0) வன்மையாகஏற்க முடியாது
1	அது தளர்வாகஇருக்கச் செய்கிறது					
2	நன்றாக தூங்குவதற்கு உதவுகிறது					
3	அது வலியிலிருந்து விடுபடஉதவுகிறது					
4	அது அசதியிலிருந்து விடுபடஉதவுகிறது					
5	அது மென்மையான விளைவை ஏற்படுத்துகிறது					
6	அது எரிச்சலிருந்து விடுபடஉதவுகிறது					
7	அது உங்களை ஓய்வாகஉணரச் செய்கிறது.					

ஒப்புதல் அறிக்கை

எனக்கு இந்தஆய்வைப்பற்றிய முழு விவரம் விளக்கமாகஎடுத்துரைக்கப்பட்டது. இந்தஆய்வில் பங்குபெறுவதில் உள்ளநன்கைள் மற்றும் தீமைகள் பற்றிநான் புரிந்துகொண்டேன். நான் இந்தஆய்வில் தானாகவேமுன்வந்துபங்குபெறுகிறேன். மேலும் எனக:கு இந்தஆய்வில் இருந்தஎந்தநேரமும் விலகிக்கொள்ள முழு அனுமதிவழங்கப்பட்டுள்ளது. என்னுடையசிகிச்சைஆவணங்களைப் பார்வையிட்டுஅதில் உள்ளவிவரங்களைஆய்வில் பயன்படுத்திக் கொள்ளஅனுமதிஅளிக்கின்றேன். என்னுடையபெயர் மற்றும் அடையாளங்கள் ரகசியமாகவைத்துக் கொள்ளப்படும் என்றும் எனக்குஉறுதியளிக்கப்பட்டுள்ளது.

இப்படிக்கு,

.....

CERTIFICATE OF VALIDATION

This is to certify that the tool,

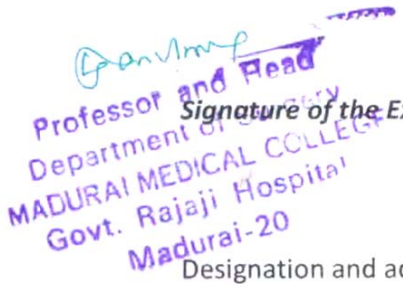
Section I Demographic Data & Clinical Variables

Section II SAQS – Subjective Assessment of Quality of Sleep Scale

Section III Opinion regarding effect of Back Massage Therapy & Music Therapy

Prepared by S. MuniammalM.Sc(N) Ist year student of College of Nursing, Madurai Medical College, Madurai. Who has undertaken the study field titled of

"A COMPARATIVE STUDY ON THE EFFECTIVENESS OF THERAPEUTIC BACK MASSAGE AND MUSIC THERAPY ON THE QUALITY OF SLEEP AMONG HOSPITALIZED PATIENT WITH INADEQUATE SLEEP AT POST OPERATIVE WARD GOVERNMENT RAJAJI HOSPITAL, MADURAI"



Signature of the Expert

Designation and address

CERTIFICATE OF VALIDATION

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SIGNATURE OF THE EXPERT
NAME: B. SARA
DESIGNATION: READER IN NURSING
DATE: 15/04/11

CERTIFICATE OF VALIDATION

This is to certify that the tool,

Section I Demographic Data & Clinical Variables

Section II SAQS – Subjective Assessment of Quality of Sleep Scale

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SIGNATURE OF THE EXPERT
NAME: R. DEEPA
DESIGNATION: ASSO. PROF
DATE: 10.4.11

CERTIFICATE OF VALIDATION

This is to certify that the tool,

Section I Demographic Data & Clinical Variables

Section II SAQS – Subjective Assessment of Quality of Sleep Scale

Section III Opinion regarding effect of Back Massage Therapy & Music Therapy

Prepared by S. MuniammalM.Sc(N) Ist year student of College of Nursing, Madurai Medical College, Madurai. Who has undertaken the study field titled of

"A COMPARATIVE STUDY ON THE EFFECTIVENESS OF THERAPEUTIC BACK MASSAGE AND MUSIC THERAPY ON THE QUALITY OF SLEEP AMONG HOSPITALIZED PATIENT WITH INADEQUATE SLEEP AT POST OPERATIVE WARD GOVERNMENT RAJAJI HOSPITAL, MADURAI"

SIGNATURE OF THE EXPERT
NAME: M JASLING
DESIGNATION: PROFESSOR
DATE: 27.4.11

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TOOL VALIDITY CERTIFICATE

This is to certify that the tool developed by Mr./Mrs. S. MuniammalIst year M.Sc Nursing student of College of Nursing Madurai Medical College. Madurai has been validated by the undersigned. The suggestions and modifications given by me will he incorporated by the investigator in concern with their respective guide.

Title of the research study "**A Comparative Study on the effectiveness of therapy Back Massage and Music therapy on the quality of sleep among hospitalized patients with inadequate sleep at Post operative ward at Government Rajaji Hospital, Madurai.**"

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Date : 22.04.2011.

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CERTIFICATE OF VALIDATION

This is to certify that the tool,

Section I Demographic Data & Clinical Variables

Section II SAQS – Subjective Assessment of Quality of Sleep Scale

Section III Opinion regarding effect of Back Massage Therapy & Music Therapy

Prepared by S. MuniammalM.Sc(N) IInd year student of College of Nursing, Madurai Medical College, Madurai. Who has undertaken the study field titled of

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CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation "A Comparative Study On The Effectiveness Of Therapeutic Back Massage And Music Therapy On The Quality Of Sleep Among Hospitalized Patient With Inadequate Sleep At Post Operative Ward Government Rajaji Hospital, Madurai" done by Mrs.S.Muniammal, M.Sc., Nursing II year student, College of Nursing, Madurai Medical College, Madurai - 20 has been edited for Tamil language appropriateness.

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CERTIFICATE OF ENGLISH EDITING

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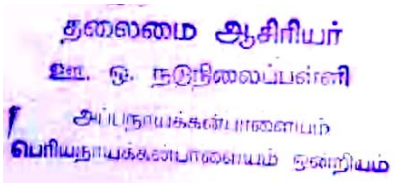

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Certificate Course in Counselling
Back Massage and Music Therapy

Reg. No. PCC/21/July 2011/161 Date: 10/07/2011

This is to certify that **Ms. S. MUNIAMMAL**

has completed our **CERTIFICATE COURSE IN COUNSELLING BACK MASSAGE AND MUSIC THERAPY** *(24hrs Part-time Education Programme designed and offered by experts) by effectively particpating in theory & practical classes and successfully completing all the exercises. She has been placed in* **FIRST CLASS**

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Back Massage:

The Researcher giving Back Massage

Music Therapy:

The Researcher giving Music Therapy

Procedure of Back Massage

Warm the massage oil in your hands, and apply a modest amount with whole hand “effleurage”. Use the whole surface of both hands Stroke reasonably firmly upwards from the lower back all the way up to the neck circle around and back to the lower back region.

Required Equipment for Therapeutic Back Massage

1. Warm, Quiet, Relaxed Environment.
2. Firm comfortable surface such as a bed, massage table or floor mat
3. Massage oil, Baby oil will do fine for a starter
4. Towels to lie on, and also to cover the body
5. Cushions or pillows

Massage Tips

1. Massage oil decreases the friction created on the skin and prevents the pulling of hairs. Don’t use too much; the less oil, the greater the friction and the deeper the pressure.
2. Use slower movements for a soothing or claming response
3. When applying pressure with finger or thumb, provide support with the other fingers and thumbs, Otherwise you will wear your thumbs out.

Massage Benefits

1. Relaxation, releasing of tight muscles.
2. Emotional comfort and stress management
3. Increased body awareness
4. Improved circulation, and improved lymphatic drainage for release of toxins.
5. Improved Quality of sleep.

Procedure for Back Massage

ACTION	RATIONALE
Explain the procedure and offer back massage to the patients	Back massage can facilitate circulation and promote relaxation.
Perform Hand hygiene	Hand hygiene deters the spread of microorganisms.
Close the curtain or door	Privacy increases relaxation.
Assist the patient to the prone position or side lying position with the back exposed from the shoulders to the sacral area	This position exposes an adequate area for massage with privacy and warmth maintained. Having the bed in the high position reduces back strain for the nurse.
Warm the lubricant or lotion in the palm of your hand or place the container in warm water.	Cold lotion causes chilling and uncomfortable sensation.
Using light gliding strokes (effleurage), apply lotion to patient's shoulders, back, and sacral area.	Effleurage relaxes the patient and lessens the tension.
Place your hands beside each other at the base of the patient's spine and stroke upward to the shoulders and back downward to the buttocks in slow, continuous strokes. Continue for several minutes.	Continuous contact is soothing and stimulates circulation and muscle relaxation.
Massage the patient's shoulders, entire back, areas over iliac crests, and sacrum with circular stroking motion. Keep your hands in contact with the patient's skin. Continue for several minutes, applying additional lotion as necessary.	A firmer stroke with continuous contact promotes relaxation.
Knead the patient's skin by gently alternating grasping and compression motions (petrissage)	Kneading increases blood circulation to areas.

ACTION	RATIONALE
Complete the massage with additional long stroke movements.	Long stroking motion is soothing and promotes relaxation.
During massage, observe the patients skin for reddened or open areas. Pay particular attention to the skin over bony prominences	Pressure may interfere with circulation and lead to development of decubitus ulcers. Backrub stimulates circulation to these areas.
Use the towel to pat the patient dry and to remove excess lotion. Apply power if the patient requests it.	This provides additional comfort for the patient.
Perform hand hygiene.	Hand hygiene deters the spread of micro organisms.
Assess the patient's response and record your observations on the patient's chart.	This provides accurate documentation of the procedure and condition of the patient's skin.

PROCEDURE FOR MUSIC THERAPY

Music therapy is administering selected recorded Indian Classical instrumental music, rendered by experts in the field especially designed to induce sleep.

Music therapy refers to the administration of rhythmic and melodious tune recorded in a I pod for 10 minutes intended to induce sleep Raga jaijawanti brings about relaxation which prepares the individuals for deep slumber and is facilitated by Raga Pooriya. Raga Kapi takes the individual to a state of drowsiness which is preparatory to deep sleep. Raga Nelambari is gentle and soothing to the central nervous system and drifts into relaxation and sleep.